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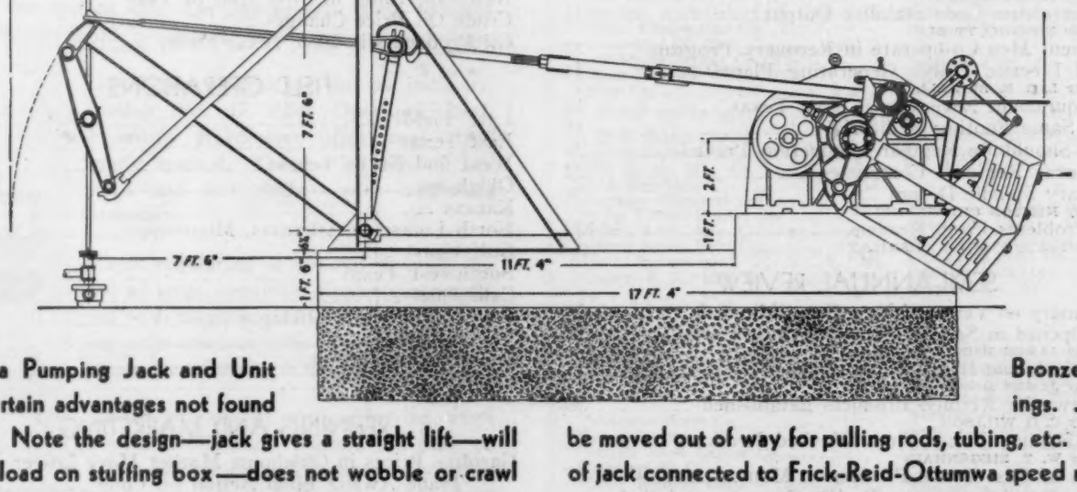

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Curtailment of Crude Production Is Necessary if Petroleum Code Is to Aid Labor and Industry

By ANDREW M. ROWLEY

HEARING on the petroleum code in Washington this week overshadowed in interest other developments in the business. The price situation temporarily remained in status quo as more than 1,000 oil men, including the executives of most of the different companies, attended the sessions in Washington. A readjustment of the crude and refined oil price structures is expected when matters relating to wages, working hours and other controversial factors of the proposed code for the oil industry are definitely determined and made effective by the Federal administration.

While the government seems to feel the matter of wages and working hours is the one paramount question to be decided, the real problem to be settled is that of crude oil and gasoline overproduction. Any continuance of overproduction of the raw material or finished product will entirely nullify any and all efforts to increase wages and reduce working hours. It is felt the government representatives must realize this obvious condition.

Especial interest is manifest in just what steps will be taken to allocate production among the different states and how any such allocation will be made effective. Success of the efforts being made to aid the oil industry certainly depends on limiting crude oil production to actual market requirements. This most assuredly means a very material reduction in output in several states, particularly in Texas where production has been averaging, until last week, more than one and one quarter million barrels daily.

Will Texas, under operation of the code and government supervision of the oil industry, reduce its production to about 800,000 barrels daily? If it does, many of us who feel government intervention is entirely too great a price to pay for settlement of some of the present problems, will likely change our minds, but we still believe it will be a long time before the Millennium.

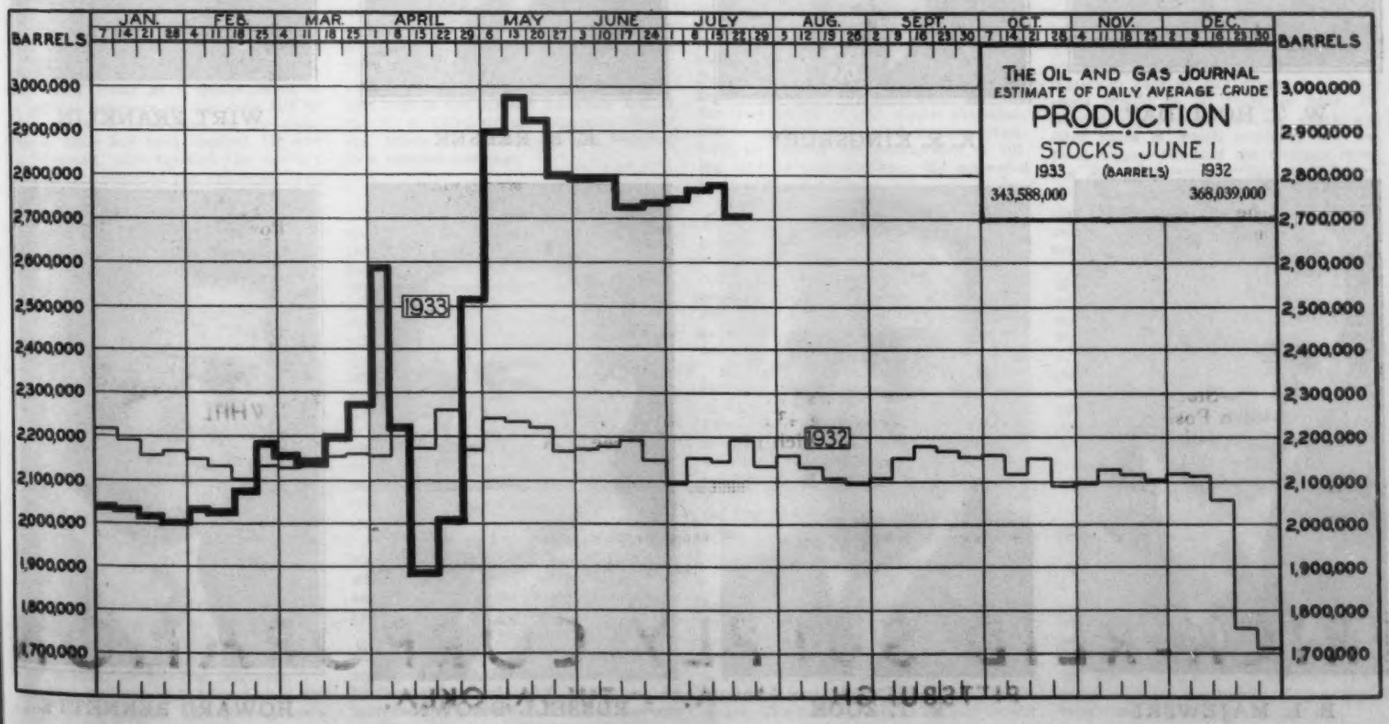
While both the crude and refined oils markets have been marking time, during the hearings in Washington, the elimination of production and shipments of hot oil in East Texas strengthens the belief a readjustment in the crude oil price schedule is imminent and that the price muddle of the past few weeks will be straightened out within the very near future. Such a readjustment is expected also to have a strengthening effect upon the gasoline market.

Crude Oil Production in the United States

Estimated daily average production for the week ending July 22, and a comparison with the previous week and a year ago, follows:

	July 22	July 15	July 23, 1932
Oklahoma—			
Oklahoma City	281,986	264,320	126,115
Seminole-St. Louis	128,320	116,410	117,720
Remainder of State	211,415	207,250	210,085
Total Oklahoma	621,721	587,980	453,920
East Texas—			
Lathrop	248,575	292,520	129,896
Kilgore	182,690	214,985	104,515
Joiner	167,715	197,365	111,087
Total East Texas	598,980	704,870	345,498
West Texas	158,035	159,689	177,512
North Central Texas	72,461	72,104	74,137
Texas Panhandle	50,310	45,792	53,862
East Central Texas	57,998	58,210	57,536
Gulf Coast—Texas	204,793	202,123	112,295
Southwest Texas	54,215	55,161	60,578
Total State of Texas	1,196,792	1,297,940	881,418
Kansas	128,680	132,570	96,380
North Louisiana	26,320	26,082	29,915
Gulf Coast—Louisiana	44,465	43,455	32,461
Arkansas	31,350	30,085	34,155
Eastern Fields	110,000	112,000	118,000
Rocky Mountain area	74,100	73,300	81,510
California—			
Santa Fe Springs	53,750	53,750	58,750
Long Beach	73,750	73,500	69,000
Playa Del Rey	11,250	11,250	14,500
Elwood	14,000	14,250	14,250
Kettleman Hills	62,750	63,000	62,000
Remainder of State	275,500	272,250	251,500
Total California	491,000	488,000	470,000
Total United States	2,724,428	2,791,421	2,197,759

Decrease 66,993 Bbls. Daily.



Oil Industry Leaders Choose Committee to Function Under New Recovery Law

AXTELL J. BYLES

WASHINGTON, D. C., July 24.—Leaders of the oil industry Saturday chose their executive committee to function under the national industrial recovery law with four of the eight members representing the major companies and four the independents.

Axtell J. Byles, president of the American Petroleum Institute, was elected chairman of the executive committee with members as follows:

K. R. Kingsbury, president, Standard Oil Co. of California, San Francisco.

Harry F. Sinclair, chairman executive committee, Consolidated Oil Corp., New York.

W. T. Holliday, president, Standard Oil Co. of Ohio, Cleveland.

E. B. Reeser, president, Barnsdall Corp., Tulsa.

Wirt Franklin, president, Independent Petroleum Association of America, Oklahoma City, Okla.

R. T. Zook, president, Pennsylvania Grade Crude Oil Association, Bradford, Pa.

Howard Bennette, president, Western Petroleum Refiners Association, Tulsa.

B. L. Majewski, president, Illinois Petroleum Marketers Association, Chicago.

Russell Brown, of Tulsa, general counsel for the Independent Petroleum Association, was elected secretary of the executive committee.

Three persons designated by Hugh Johnson, the industrial administrator, will serve this committee in regulating the petroleum industry under plans for the proposed oil trade practice code.

Representatives of the major oil companies nominated for the executive committee the following eight, the first four representing the major companies and the last four independent interests:

C. B. Ames, Texas Co., New York; K. R. Kingsbury, Standard Oil Co. of California, San Francisco; Harry F. Sinclair, Consolidated Oil Corp., New York; C. E. Arnott, Socony-Vacuum Corp., New York; Charles F. Roeser, Fort Worth, Tex.; Wirt Franklin, president of the Independent Petroleum Association of America, Oklahoma City, Okla.; Howard Bennette, Western Petroleum Refiners Association, Tulsa; W. D. Hudson, Tennessee Oil Men's Association, Nashville.

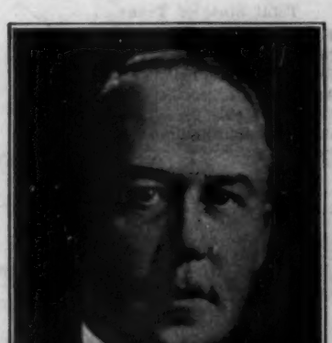
Spokesman for the independent interests nominated a similar ticket of eight candidates, four from the big companies and four from the independents.

The independent-faction also nominated Messrs. Kingsbury, Franklin, Sinclair, Bennette and the following:

W. T. Holliday, Standard Oil Co. of Ohio, Cleveland; E. B. Reeser, Barnsdall Oil Corp., Tulsa; Ralph T. Zook, Bradford, Pa., and B. L. Majewski, of the Illinois Petroleum Marketers Association, Chicago.

HARRY F. SINCLAIR

W. T. HOLLIDAY



K. R. KINGSBURY

E. B. REESER

WIRT FRANKLIN

B. L. MAJEWSKI

R. T. ZOOK

RUSSELL BROWN

HOWARD BENNETTE

Labor Provisions Prove Troublesome at Hearings on Oil Industry's Code for Fair Competition

By CHARLES E. KERN
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., July 25.—Gen. Hugh S. Johnson, administrator of the Industrial Recovery Act, resumed today his efforts to resolve controversial questions which came to the surface in hearings begun before him yesterday to formulate a code of fair competition for the oil industry. The labor problem proved the most divisive one and after five hours of discussion yesterday K. M. Simpson, assistant administrator for the petroleum industry, seeing how far apart the views of interested groups were, called a get-together meeting to be held in his office last night.

In compliance with Mr. Simpson's request committees were chosen as follows to represent the various groups and to try to harmonize their differences at the night meeting:

Production: American Petroleum Institute, Wirt Franklin; Independent producers, Joe Mahoney; labor, Harvey F. Yarrow; National Recovery Administration, Blackwood Smith and Von Szeliski.

Refineries and pipe lines: American Petroleum Institute, G. F. Holliday; independents, Rhea Sternes; labor, J. H. Kettley and P. B. Roberts; National Recovery Administration, Robert Stevens and J. Riggleman.

Marketing and distributing: American Petroleum Institute, Harry F. Sinclair; independents, Allen Tint, F. V. Bakeman and Henry Williams; labor, G. W. Stoeking, H. Carr and L. E. Matthews; National Recovery, Robert Straus and Stanley Posner.

After a three-hour session last night these representatives of the different oil industry branches failed to reach any definite agreement on hours of labor and wages for the oil code.

General Johnson called the oil men to order again today at a continuation of the general hearings on the code but at a late hour no agreement on the questions at issue had been reached. He and Mr. Simpson, who handled the meeting last night characterize the problems faced by the petroleum industry as more difficult to deal with than those of all the other industries combined. They made it plain that discussion of the points at issue will be continued until agreement is reached.

More Than 1,000 Present

More than 1,000 men representing every phase of oil production, refining, transportation and marketing are attending the open hearings before the National Recovery Administrator. The assembly hall in which the hearings are held has a seating capacity of 1,000. Yesterday and again today every seat was occupied with many oil men standing.

Among other provisions of the code which has disclosed wide difference of opinion is that relating to lease and license matters. The marketing division insists, among other things, that if company owned and controlled stations are operated by persons on commission and lease and agency basis the scale of ultimate compensation to such persons shall not be less than the minimum wages and hours of labor provided in this code.

Former Secretary of War Baker appeared to represent the Pennsylvania Grade Crude Oil Association opposed to the proposed license and leasing provisions of the code.

Preceding the code hearings the National Emergency Committee met here last Friday and Saturday, chose an executive committee and approved restrictions on leasing, licensing and price regulation.

Hundreds of oil men from various parts of the country arrived Sunday and when the hearings on the code were opened Monday by General Johnson most of them were seated in the hall.

Seeks High Degree of Self-Management

Axtell J. Byles, president of the American Petroleum Institute and chairman of the executive committee of the industry's emergency national committee, told the administrator that "the oil industry seeks to retain to the fullest possible degree the management of its own business."

Most important, Mr. Byles said, is a balancing of crude oil production with consumer demand. The labor section of the code, he said, will substantially increase employment and add very materially to the pay roll cost of the industry. This, he pointed out, was in face of the fact that "present employment, working hours and wages cannot long continue unless increased revenues are forthcoming promptly," and this can be accomplished either by an increase in the price of the industry's commodity, or by lower taxation, or both.

Mr. Byles analyzed state and Federal government taxation of petroleum products, with gasoline taxes alone at the rate of $700,000,000 a year. In the past 10 years the government's oil tax bill has been $3,500,000,000, which exceeds the amount of profit by a billion dollars.

The administrator made plain his intention to hear only facts, and later when one of the representatives of labor entered upon an argument he was told to confine his remarks to matters of fact only.

The public hearing for the oil industry was held in the palatial assembly hall of the U. S. Chamber of Commerce Building, where the sweltering heat resulted in a coatless audience.

Balanced Production Essential

Wirt Franklin appeared for the production branch of the industry, saying the whole production branch took part in drafting the code of fair competition. It represents compromises, he said, some thinking it too drastic and others not drastic enough. He insisted on balanced oil production as essential for success. Some authority, he said, must fix the price of petroleum on an economically sound basis, openly and not secretly. Oil has been on the bargain counter too long. It is the secret price that has ruined the oil man. Storage should be reduced gradually and 25-cent stored oil should not be withdrawn as the price goes up. Limiting imports is essential to stabilize the industry.

"It is only as a last resort," said Mr. Franklin, "that petroleum producers whose individualistic attitude is well known urge that the licensing system be applied to the oil industry."

A statement by Harry F. Sinclair supporting the labor sections of the code was read as embodied in the report approved by the national industrial committee. An increase of a quarter of a million workers in the industry should result from the reduction of working hours which the code provides or an increase of about 25 per cent to the present force. This increase would be much greater if persons linking the oil business with other businesses are included under the code.

"It would not be reasonable or practicable to attempt regular schedules of less than 40 hours in the oil industry," Mr. Sinclair declared. The present average weekly hours are 49.38. The earnings of employes cannot be cut in proportion to the cut in working hours. The minimum rates provided in the code, he said, are liberal. It is estimated that the labor provisions will increase cost $300,000,000 annually.

Why Old Code Failed

Roy B. Jones, of the Panhandle Producing & Refining Co., Wichita Falls, Tex., said he spoke only his individual opinion. The old code failed, he said, because it lacked enforcement, and the great majority who were compelled to meet competitive conditions in the petroleum industry make it essential to license the business of producing, transporting, refining and marketing petroleum and its products if the code and policies are to be effectuated.

Those attending the conference expressed the opinion that a code of marketing rules was essential, and they constitute a definite attempt to give stability.

Thomas P. Henry, president of the A.A.A., urged that "the oil industry be required to take drastic steps to improve its marketing practices before any consideration is given to higher prices for motor fuel."

Mr. Henry appeared at the invitation of the recovery administration to present the consumer viewpoint on the code. He recommended that marketers of gasoline be required to post on each pump reasonable evidence of the quality of the fuel justifying a higher or lower price than the regular gasoline and said there were widespread variances in gasoline prices, and gasoline prices in small areas rapidly became the same. He said the Government should require the elimination of duplication and waste particularly as regards the multiplicity of filling and service stations. He approved the posting of prices.

"From the standpoint of the motorists," said Mr. Henry, "the provision governing the fixing of prices by the President is the heart of the proposed code." He said while gasoline sold for 12 cents a gallon in Texas, Pennsylvania and Oklahoma, in New York City it was only 10.5 cents. In Missouri it was 7 cents.

Harvey C. Fremming came on the platform with a long statement in behalf of the International Association of Oil Field, Gas Well and Refinery Workers of America. He declared that the oil code as presented July 13 "was admittedly the product of haste and lack of thoughtful study." The minimum rates he said were too low and the hours of labor were too great.

Labor Provisions Criticized

In the "share the work" program the hours were 39 weekly and the code specifies 40 hours, which would result in increased unemployment in the refinery branch. If the proposed minimum for all branches now 42.6 hours were reduced to 40 hours that would be entirely inadequate. The labor provision he said would not eliminate unemployment or raise the purchasing power.

Mr. Fremming proposed a 30-hour week for producing, pipe line, transportation and refining. Minimum pay should be $4.75, payable in cash or by check for a day of six hours. No minors under 18 years should be employed. Employes should have the right to bargain collectively, but should not be restricted to any union. Mr. Fremming recounted many conditions of labor that should be required by the code for protection of employes.

"Any elaborate Federal plan on petroleum conservation at this time to duplicate state efforts would not aid but would materially hinder the accomplishment of the purposes of the recovery act," declared J. R. Parton, vice president, Northern Louisiana Independent Petroleum Association of America. Interstate commerce regulation, he said, is the one essential the Federal Government can contribute to make more effective state conservation regulation. Mr. Parton devoted much time to reviewing state allowables, saying that to eliminate excess of allowable would greatly facilitate recovery from disturbing market instability. Without Federal aid enforcement of state laws would be impracticable. Already Federal orders have been influential.

East Texas Within Allowable

"I am advised," said Mr. Parton, "the East Texas Field production is now within the ordered allowable." He insisted on further restriction of imports of petroleum. The question of conservation should have no place in this code as conservation should rest in the states themselves.

C. R. Starnes, of Texas, speaking for labor, said the code asks for price-fixing, protection of contracts in violation of the antitrust laws, arbitrary restriction of crude supply and failed to set up and agree to any definite hours of labor and rates of wages. He advocated a 30-hour week with employes of filling stations working not more than 36 hours, minimum rate of pay except in certain cases should be 50 cents an hour. He wanted payment in cash or check and cited cases in which employes had lost their wages. He said the Chicago meeting did not represent the oil industry.

"We do not ask price fixing, it is not the handmaiden of hours of labor and rates of pay," he said, referring to himself and associates as independents.

Harry C. Bates, of the Bricklayers and Masons National Union of New Jersey, wished to have refinery wages in his state made on the same scale as the wages of mechanics.

H. J. Carr, of the International Association of Mechanics, was the only speaker accorded pronounced applause. He agreed that hours of labor should be reduced and rates of pay increased but said to save time he would not read a long report.

Regulate Leasing

The national emergency committee, meeting last Saturday, by a vote of 21 to 18, adopted the so-called "long rule eight" of the code formulated at Chicago, which authorizes strict regulation of the practices of major companies in leasing retail distributing agencies. The recommendation that the code include price regulation carried by a vote of 27 to 18 and the one that the administration license every unit in the industry was adopted by a vote of 37 to 8.

Changed Conditions in the Oklahoma City Field Create New Problems for Production Men

By L. G. E. BIGNELL
Petroleum Engineering Editor

During the past two years the two oil fields in the Mid-Continent area which have received the most publicity have been Oklahoma City and East Texas. The great depth of the wells and their large capacities have been the prominent features of the Oklahoma City Pool and the large area and great number of wells has directed attention to East Texas. Well potentials in both fields have been stressed and because it seemed that the industry could for an unlimited time secure all of the oil it required from these two areas there has been a tendency to neglect other areas and discount the importance of the other fields in this country.

But like every other field discovered in this country there has been a limit to the natural flowing life of the wells in these two pools and from information now available it is apparent that both East Texas and Oklahoma City Fields are approaching rapidly the limit of their flowing life. This statement is not to be taken too literally for it is admitted that many wells in either pool will continue to produce their oil by natural flow for some time to come, but a sufficient number of the wells in both fields have passed the natural flowing stage to make the cost of securing oil from them an important factor in the rate of future production from the fields as a whole.

When any appreciable number of wells in any field have to be put on mechanical power to secure the oil the cost of securing this oil immediately increases and the operators with such wells naturally expect to receive a price for their oil that is in line with the production costs. And this is what is happening in Oklahoma City and East Texas now and an ever increasing number of wells are reaching their limit of natural flow.

Oklahoma City Situation

In Oklahoma City the great depth of the wells presents a number of interesting mechanical problems as to the methods that can best be applied to secure the oil when the formation pressures drop below the flowing limits. There is a transition stage between all natural flow and mechanical lift that is now being passed through in Oklahoma City and many of the wells are being tubed to prolong their natural flowing life.

Wells in the lower Simpson zone have been producing an appreciable quantity of water for some time. This water movement through the formation has been quite steady and it apparently has reached its maximum as to rate of movement because it is now reported that the percentage of water to oil produced is about constant for the lower Simpson wells. Many of these wells are produced by gas lift and some run as high as 85 per cent water with the oil. The salt water is being handled through disposal systems and it is reported that these disposal systems are not now running to their full capacity.

Wilcox Zone Wells

As the wells in the Arbuckle lime and lower Simpson zones have reached a more or less settled condition and the methods of producing them have been decided upon the main problems now confronting the operators in the Oklahoma City Field lie in the Wilcox sand zone. This is the most prolific portion of the field and it is estimated that from it the major portion of the remaining oil will be produced.

This zone lies in a band around the flanks of the lower Simpson zone and varies in width from one-quarter to 1½ miles. It is widest at the north end and some of the producing formation extends outside of the field and lies under city property upon which drilling has been restricted. It is a truncated sand body, that is to say, that after the sand was deposited by the sea and consolidated into sandstone there were earth movements extending for long geological periods during which the flat stratum of sand was tilted. While this movement was going on weathering removed a portion of the exposed stratum so that the upper part of the formation now exists as a wedge with the thin edge in contact with the lower Simpson.

As the Wilcox sand body has been tilted and then covered by later sediments it is completely sealed across this upper edge that was eroded. This sealing creates the natural trap for the oil and gas and in its original state the formation contained gas in the extreme upper section where the sand was reduced to a comparatively thin wedge, with oil and gas adjacent to this area on the west and downdip, and still further to the west the water accumulated.

The original water level for this field has been established as having been at approximately minus 5,400 feet below sea level. The surface elevation of the field is approximately 1,240 feet above sea level which would make the total depth to the original water level about 6,640 feet. It has been estimated that the water existed in this formation at pressures up to 2,660 pounds per square inch and this pressure was supposed to be created by hydrostatic head effective on these formations.

The first well to encounter water in the Wilcox sand zone was Sinclair Oil & Gas Co.'s No. 2 School Land 67, completed June 12, 1930, which made 35 per cent salt water when finished. In this well it was estimated that the water level was 5,425 feet below sea level and as other wells later completed checked this datum it has been generally accepted that 5,400 feet minus sea level was the original water level for the field.

Water Movement

With the oil existing in the Wilcox formation between the gas and water an ideal producing condition was established and under restricted rate of withdrawal it is probable that this sand would have yielded a large proportion of its oil by natural flow.

Unfortunately withdrawals from the Wilcox wells have not been in keeping with the best production practice and much excess oil and gas have been withdrawn under special permits with the result that a gas cap has been formed that extends across a large portion of the top of the Wilcox sand zone.

High withdrawal rates have lowered formation pressures so that a considerable portion of the gas has come out of solution in the oil and the oil level in the sand has receded or dropped. The original gas cap in the north end of the field in Section 2 included only a few wells on the extreme east edge of the Wilcox zone but it has been noted that more wells to the west have been brought into this gas cap zone until it now extends well over to the west of Section 2 and into Section 3.

This condition of gas cap has also been noted in the Wilcox area in the south portion of the field and seems to indicate that the water movement updip has not been rapid enough to repressure the formation and maintain a high enough pressure upon the oil to keep the gas in solution .It is now reported that the bottom hole pressure in the north and south Wilcox sand zones is between 1,200 and 1,300 pounds. Originally this formation pressure was well over 2,400 pounds per square inch.

As a result of this condition many wells in the Wilcox zone have high gas-oil ratios when producing through the casing and to remedy this strings of 2½-inch tubing are now being run in many wells. Many wells in the lower Simpson zone were tubed over 2½ years ago for the purpose of continuing natural flow and lowering gas-oil ratios. Also by the application of back pressure to the formation it was hoped to control water movement in that formation, but that end has not been attained with any great degree of success.

In the north end of the field the apparent slow movement of the water updip may be accounted for by taking into consideration the fact that there is a large body of oil in the Wilcox formation downdip from the drilled portion of this sand. This means that the water-oil contact is outside of the producing portion of this formation. With the heavy withdrawal of oil and gas it is now apparent that the producing portion of the formation has not been supplied with fresh oil as rapidly as oil and gas have been withdrawn.

In Report of Investigations No. 3,217 issued by the U. S. Bureau of Mines in conjunction with the State of Oklahoma and the Oklahoma City Chamber of Commerce on July 14, and prepared by H. B. Hill and E. L. Rawlins, senior petroleum engineer, Petroleum Field Office, Dallas, Tex., and natural gas engineer, Petroleum Experiment Station, Bartlesville, Okla., respectively, there is a fund of very interesting data presented on "Estimate of the Gas Reserves of the Oklahoma City Oil Field, Oklahoma County, Oklahoma."

Government Report on Gas

This report covers gas reserves in the five upper zones of Pennsylvania age as well as the gas produced from the pre-Pennsylvanian zones commonly known as

Summary of Oklahoma City Field Operations

December 4, 1928 to July 1, 1933

Producing formations—	Total wells drilled	Producing wells July 1, 1933	Wells flowing naturally	Wells on gas lift	Wells on pump	Oil wells converted to gas wells	Wells making water	Per cent water wells	Productive acreage	Total recovery July 1, 1933	Recovery per acre	Recovery per well
Arbuckle lime	115	49	0	48	1	57	49	100.00	1,590	10,523,202	6,618	91,506
Lower Simpson:												
Johnson sand	122	122	60	59	1	2	44	36.00	4,943	49,751,565	10,065	112,560
School Land sand	320	320	216	104	1	1	147	46.00				
Cleveland sand	1	1	0	1	0	0	1	100.00	10	6,428	643	6,428
Detrital Zone	1	1	0	1	0	0	1	100.00	10	22,198	2,220	22,198
Prue sand	1	1	1	0	0	0	0	.....	10	5,703	570	5,703
Wilcox sand	455	455	389	32	34	0	18	3.96	3,485	76,503,518	21,952	167,920
Fault line	5	5	0	5	0	0	5	100.00	50	148,932	2,978	28,300
	1,020	954	666	250	37	.....	265		10,098	136,961,546	13,600	134,200
Gas wells making oil	....	.....	.....	.....	.....	60	.....		.....	6,540,958	.....	.....
Holes abandoned	19											
Dry holes	4											
Drilling July 1	9											
Locations	3											
Rigs	24											
Shut down	10											
Total operations	1,080											

Nine Arbuckle wells, plugged	256,007
Total reported oil	148,758,601
Oil upon which gross tax was paid	148,683,128
Oil unaccounted for by leases	4,924,527

the Arbuckle lime, lower Simpson and Wilcox sands. This report states that the net recoverable gas reserves in the Pennsylvanian zones, based upon an abandonment pressure of 100 pounds per square inch gauge, is estimated to be 117,000,000,000 feet; based upon an abandonment pressure at the well head of 400 pounds per square inch gauge, the net recoverable gas reserves will be 95,000,000,000 feet.

In another report it is stated that the gross production tax has been paid to the State of Oklahoma upon 146,601,306 bbls. of oil produced since the discovery of the field, December 4, 1928, up to June 1, 1933. The oil reported to the commission was 137,699,894 bbls. for the same period or a total of 8,902,412 bbls. of unreported oil.

Of the oil accounted for 71,632,789 bbls. came from the Wilcox zone, 48,887,179 bbls. from lower Simpson, 10,509,102 bbls. from Arbuckle lime, 6,539,142 bbls. from wells classed as gas wells, 141,682 bbls. from fault line zone and 250,097 bbls. from wells reported as abandoned.

In Report 3,217 it is stated that if the average amount of gas produced with a barrel of oil has been between 5,000 and 8,000 feet the total amount of gas produced based upon the above recovery figures would be from 733,006,530,000 to 1,172,810,448,000 feet. It is further stated that it has been estimated that the gas-oil ratio has ranged all the way from 300 to 500,000 feet per barrel so the 5,000 to 8,000 feet per barrel does not seem excessive.

Effect on the Field

This tremendous withdrawal of gas has made itself apparent in the field by the appearance of gas caps, particularly in the Wilcox sand zone. In preliminary work in the Oklahoma City Field on the solubility of gas in oil Ben E. Lindsly, senior petroleum engineer, U. S. Bureau of Mines, Bartlesville, Okla., reports as follows:

Bottom hole temperature, 124° F.

Bottom hole pressure, 2,300 pounds per square inch.

Temperature of oil at surface, 80° F.

Separator pressure, 70 pounds per square inch.

Amount of gas dissolved in barrel of oil underground, 885 feet per barrel.

Amount of gas dissolved in barrel of oil in separator, 28 feet per barrel.

Viscosity of oil (Saybolt 100° F.), 41 seconds.

Gravity of oil (A.P.I. at 60° F.), 40°.

Amount of gas per barrel of oil at 1,100 pounds, 430 feet.

Mr. Lindsly is now at work in the Oklahoma City Field upon this solubility problem and gathering additional data which will have a direct bearing upon the explanation of many of the things that have happened there and pointing a way to correct production practice for the future.

As the present bottom hole pressure in the Wilcox formation is below 1,220 pounds per square inch it seems safe to assume that gas is coming out of solution in the oil and tending to gather in the top of this formation from which the oil has been withdrawn.

As the bottom hole pressure is rapidly approaching that point at which it will not be sufficient to continue to flow the wells naturally some form of mechanical lifting equipment must be used. Gas lift will be resorted to first at many of the wells. It has been stated that 40 per cent of the oil will be recovered by natural flow or of the estimated total recovery, 160,000,000 bbls. will be secured by natural means while 240,000,000 bbls. must be lifted by some mechanical means.

Of the estimated 160,000,000 bbls. to be recovered by natural flow about 146,601,306 bbls. have been reported as produced prior to June 1, leaving 13,398,694 bbls. still to be produced by natural methods. The production rate for the week of July 15 is reported as 264,320 bbls. daily. The balance of the natural flow oil will be recovered in about 50 days if this rate of recovery is maintained and the general average can be applied to all wells.

It has been estimated that it will require 1,000 feet of gas in addition to formation gas to recover the 240,000,000 bbls. of oil remaining after natural flow ceases. This means 240,000,000,000 feet of gas will be required and according to the estimates of the Bureau of Mines engineers this is more than the original recoverable volume of gas from the Pennsylvanian formations. As stated above these estimates were 117,000,000,000 feet with 100 pounds abandonment pressure, or 95,000,000,000 feet at 400 pounds well head gauge pressure at time of abandonment.

It is reported that in the Wilcox area where wells are closely spaced only one well at a time will produce oil and the offsets have to await their opportunity to secure oil after the first well has secured its allowable. This is due to the fact that the casing is set high and the hole has penetrated over 100 feet into the Wilcox sand so that there is a large portion of the open hole in that part of the sand occupied by gas only.

When one well is producing oil it creates an area of low pressure immediately around it and to this zone the oil is drained. The gas being more mobile will drain to offset wells and fill the casing to the exclusion of the oil. For this reason the offset wells to the producing well only secure gas when opened and will not blow into oil for a long time, if at all.

Running Tubing

The method followed by many operators in running tubing into the casing is to first kill the well with crude oil. As the bottom hole pressure is not high the oil is pumped into the casing and the gas drained off gradually until the gauge on the casinghead registers zero pressure. Some of this oil will flow into the formation but it is generally possible to pump the oil in fast enough to overcome this condition and the hole is filled to a point where the well is dead.

With a 38° A.P.I. gravity crude oil each 100 feet of column will exert a pressure of approximately 36.2 pounds per square inch. If the bottom hole pressure in the well is 1,250 pounds it would require that the hole be filled to a height of about 4,525 feet with crude oil to kill the well.

When the well is dead the tubing is run using the usual methods and is set close to the bottom of the hole. The crude oil used to kill the well is swabbed out of the tubing until the well again starts to produce by natural flow. In some cases gas is injected into the annular space between tubing and casing and the pressure built up until the well kicks off and flows naturally through the tubing.

Cleaning Well

Before the tubing is run many wells need cleaning. The average penetration of Wilcox sand wells is about 120 feet but some of them have nearly 200 feet of sand open in the hole. It has been found that there was as much as 165 feet of cavings in the bottom of the hole. That is, only 35 or 40 feet of the upper part of the hole was open.

The cleanout work has been done with suction bailers in many wells and the material removed has consisted of sand, shale and other material that has settled and packed.

This work is important because if the bottom of the hole is filled with debris and only the upper portion opened it is quite likely that the gas cap area is all that has free access to the casing. It is assumed that oil has come up through the sediment in the hole but it has been found that after cleaning, the wells act better although this in itself does not materially change gas-oil ratios.

After the tubing is run into the well the oil again establishes its level and it has been found that casinghead gauge pressure will indicate the position of the top of the fluid column fairly close. If the pressure registered is 1,000 pounds at the casinghead the column of oil in the hole is much lower than it will be if the gauge pressure is only 500 pounds. This condition of varying fluid levels seems to be a characteristic of the individual well and it is only ascertained after the cleanout work and tubing job has been completed.

Some of the tubing strings have been provided with kickoff collars to lower the pressure required to start the well flowing. It is usual practice to space the upper kickoff collar about 300 feet below the top of the fluid column and then insert other kickoff collars at about 300-foot intervals on the tubing to the bottom of the well.

These aids to continuation of natural flow are becoming quite necessary for all Wilcox wells and it is expected all will be equipped with strings of tubing soon, mostly 2½-inch diameter. There is ample gas now available from the natural gasoline plants in the field to operate the wells, but it is expected the volume of gas needed will increase as the fluid level in the well decreases.

Gas-Oil Ratio Reduced

It is reported that the use of tubing has reduced the gas-oil ratio materially in many wells. Wells formerly making 15,000 to 20,00 feet of gas per barrel of oil have been operated with tubing on gas-oil ratios of 2,500 to 5,000 feet.

Other reports were not so favorable because it was found that the volume of oil produced through the tubing was much less than formerly obtained through the casing, and while the total output of gas has been reduced by using the smaller diameter flow string the oil recovered had also decreased so the gas-oil ratio had actually increased. However, it has been found that experimenting with the adjustable top hole choke or bean has been effective in placing some back pressure on the well and reducing the gas-oil ratio.

Some operators plan to try bottom hole chokes in their tubing on the theory that permitting the gas to expand low down in the flow string will assist in increasing efficiency of operation and also in lowering gas-oil ratios.

There is work still to be done in determining the best procedure to follow in tubing Wilcox sand wells but it seems definite that this will be the next step in solving production problems of wells located in the Wilcox sand zone.

One well, according to plans, is to be equipped immediately with a submerged electric pump and put on mechanical lift. This pump has been tried in Oklahoma City wells with good results, and it is believed it will work satisfactorily in the Wilcox wells with fluid levels within 3,000 feet of the top of the hole.

It has been suggested that individual compressor units be set up at wells taking 300-pound gas from the field distributing system and boosting it up to 500 pounds or more for use in the wells. This is suggested because risks are involved in transporting high pressure gas through portions of the field where there are homes, because a break in the line might cause a fire hazard.

Paraffin Troubles

This oil from any of the zones in Oklahoma City Field has a gravity ranging from 37.8 to 40.4 ° A.P.I. scale and the temperature in the wells varies from 34 to 92° F. with an average varying from 63.2 to 70.4° F. The lower temperatures were found in wells that had a large volume of gas, which had a cooling effect as it expanded in coming up the flow string.

When the flow was through the casing the precipitation of paraffin on the walls of the casing was not particularly noticeable. Since the wells have been tubed and the oil and gas flows through the smaller string it has been noted that paraffin is forming at the top of the oil column between tubing and casing. The paraffin precipitated in this annular space is now of considerable volume and is presenting problems that are not easy to overcome.

It is difficult to remove this paraffin settled out between tubing and casing with scrapers or other mechanical devices and it is thought that some form of solvent will be used in getting the paraffin back into solution. Just what form of solvent will be used has not been determined, but the problem is having the attention of men especially assigned to this work.

General Conditions

To the operator in the field Oklahoma City wells are presenting problems similar to those encountered in other oil fields. The principal difference is that the depth of the Oklahoma City wells makes the solution of these problems more difficult and costly. It is expected that much additional oil will be obtained by natural flow through tubing, but how long this method of production can be continued is not known at this time.

What method of obtaining the oil will

(Continued on Page 100)

Geologists From Foreign Countries Visit East Texas

Distinguished foreign geologists, in this country to attend the International Geological Congress in session in Washington, D. C., this week, made a tour of important oil fields before going to Washington. Accompanied by well-known geologists of the United States, including Frank R. Clark, of Tulsa, president of the American Association of Petroleum Geologists, they visited the East Texas Field. The picture shown here was made near Jacksonville, Tex., while the visitors were guests of the East Texas Geological Society.

Left to right, standing: I. M. Goubkine, Moscow; Frank R. Clark, Tulsa; Ezequiel Ordones, Mexico City; Frank, Paulsen, Tyler; Hans Kugler, Basle; W. E. Wrather, Dallas; A. Bens, Berlin; W. C. Thompson, Tyler; and Louis de Loczy, Budapest. Bottom row: F. H. Lahee, Dallas; E. A. Wendlandt, Tyler; J. E. Hudnall, Tyler; Dimitri Pirkin, Moscow; and Yoshinosuke Chitani, Tokio.

Durable Concrete Floors Made With a Careful Choice of Aggregate and Workmanship

By L. H. CORNING
Structural Engineer for Portland Cement Association

No portion of a building is subjected to the wear and abuse that a floor finish must withstand. The full abrasive action of foot traffic, rolling loaded trucks with steel wheels or sliding heavy boxes or packages of merchandise must be resisted by the floor finish. Under these conditions concrete floors must be durable. They must be strong and must not crack, craze nor dust.

The development of definite quality can be attained only by exercising equally definite precautions in making, placing, finishing and curing the concrete. Neglect or skimping in any one or combination of several of the fundamental requirements will invariably result in a defective floor finish.

The principles involved in good floor construction are simple but of vital importance. In the first place, it is necessary that the job specification be definite as to the quality of the aggregates, the amount of mixing water to be used, the method of proportioning, the mechanical operations of placing and finishing and the protection of a newly placed floor until it has attained sufficient hardness for service.

In a correctly built floor, tough, hard, durable aggregates are firmly held in a cement paste of high strength. These aggregate particles are at the surface of the floor and are the wear resistant constituent of the concrete. Since the aggregates perform this important duty and represent about three-fourths of the mass of the hardened concrete, the necessity for proper quality can be readily appreciated. All aggregates should be clean and free from dust, clay, silt or foreign matter. New and untried aggregates should be carefully tested for durability before being used. Trap rock, granite, quartzite, gravel or limestone make excellent heavy duty floor aggregates.

Grading of aggregates is as important as hardness and other physical characteristics. Poorly graded aggregates require an excessive amount of cement paste to fill the voids. A condition of this kind results in crazing and dusting of the surface and consequently a reduction in the wear resistance of the floor. Too much fine material necessitates a large amount of mixing water and a high water cement ratio means a low strength porous, nondurable concrete whether it is used for structural purposes or in a floor finish. To obtain the desired qualities in a concrete floor, select a fine aggregate consisting chiefly of grains from one-sixteenth inch to one-eighth inch in size with not more than 5 per cent passing a 100-mesh sieve nor more than 15 per cent, a 50-mesh sieve. The coarse aggregate should consist of particles from one-eighth inch to three-eighths inch in size with at least 95 per cent passing a three-eighths inch sieve. Typical fine and coarse aggregates for concrete floor finish conforming to these specifications are shown in Figures 1 and 2.

Wearing Qualities

Job experience and tests by years of service rather than mere academic theory have proved that the wearing quality of a concrete floor is to a great degree influenced by the proportions of cement, sand and coarse aggregate and the amount of mixing water, the latter being as important as any one of the other three. A concrete floor finish made with a large percentage of sand as compared with the quantity of coarse aggregate may work easily under the trowel but it will not be durable. The most satisfactory mixture for durability is one made of approximately one part cement, one part sand and two parts of coarse aggregate. Not more than 5 gallons of water per sack of cement should be added to these constituents including the free water in the aggregates which should be carefully determined and deducted from the specified quantity. Where mechanical methods of floating are employed an even smaller quantity of water may be used advantageously.

Figure 3 illustrates the type of concrete mixture that is produced when proportioned as described above. It is concrete of this kind that insures wear resistance when properly manipulated.

Good Bond Essential

A good bond between the base course and the wearing surface is essential. Unless a bond is developed between the two courses of the floor, the finish may curl and will soon be broken down by traffic as it will lack the necessary support. A good bond is readily accomplished by attention to the preparation of the base to receive the topping. It is recommended that the wearing course for heavy duty floors be placed after the base has hardened as a more accurate control of quality is possible. To insure a bond roughen the base before it has hardened to expose the aggregates slightly. All laitance, dirt or loose aggregate should be removed by means of a stiff wire broom. A base that has been prepared to receive the wearing course is shown in Figure 4. Note that no attempt has been made to give the base a smooth surface.

Just before placing the wearing course on the roughened base, the latter should be scrubbed thoroughly to remove all dust. After this has been done, wet it uniformly and keep it wet until the topping is placed but do not leave pools of water. The purpose of wetting the slab is so that it will not rob the topping of the water necessary to hydrate the cement in the wearing course. While the base is wet, broom in a neat cement grout, and place the topping before the grout hardens. The cement grout should be applied only a few feet in advance of the topping to be sure that it does not harden before the wearing course is applied.

The manipulation of the wearing course has much to do with its durability. The one-time common practice of striking off the concrete and then troweling it while still plastic, until there was a slight layer of fine material at the surface, was largely responsible for crazing, dusting and poor wear resistance. The proper procedure is to strike off the topping to grade with a straightedge and then roll or tamp it to compact thoroughly the entire depth of the wearing course. Maximum density of the floor finish, and that is essential for a durable floor, is secured only when the concrete is well compacted. Following the rolling or tamping the finish should be floated with a wood or cork float or with a power floating machine to fill up the hollows and iron out any humps left by the previous operations.

Use of Steel Trowel

Troweling is a most important finishing operation performed on floor surfaces. Wet surfaces should not be troweled for this will tend to draw to the top an excessive quantity of the fines in the mixture. To prevent such a condition, do not steel trowel the floor finish after the floating operation until absolutely necessary. Usually 30 to 45 minutes should elapse after floating before a steel trowel should be applied to the surface. A test for the time when steel troweling may be begun is when there is no water sheen visible on the surface.

It will require considerable effort to trowel the surface after it has been undisturbed for 30 to 45 minutes because of the stiffening of the concrete. Naturally cement finishers are inclined to get on the floor too quickly so that close supervision will be necessary to be sure that troweling is not started too soon. The drying of the surface moisture before troweling must proceed naturally and must not be hastened by dusting on dry sand or cement. By delaying this operation as recommended the concrete will have hardened sufficiently so that all of the materials will remain where deposited. Objectionable fine material will not be brought to the top and the coarse particles will remain at the surface. Figure 5 shows a concrete floor finish after it has been floated and when it is about ready for steel troweling. Figure 6 shows

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A. I. M. E. Stabilization Forum, Article No. 9; Will the Petroleum Code Stabilize Output?

By NORTHCUTT ELY

Government and Industry

Stabilization must be a joint undertaking of government and industry. Mr. Ely is unusually well-equipped by training and experience to write with authority on this subject. He is a lawyer by profession. He graduated from Stanford University law school in 1926 and practiced law in the states of California and New York until he became executive assistant to the Secretary of the Interior, Ray Lyman Wilbur, in 1929, in which capacity he served until March 4, 1933.

Following Dr. George Otis Smith, Mr. Ely became chairman of the technical and advisory committee to the Federal Oil Board and participated in the Kettlemen Hills Unitization project in 1931. He also represented Secretary Wilbur in the negotiations resulting in the Boulder Dam power and water contracts.

Mr. Ely is the author and compiler of two recently issued law books, namely "Oil Conservation Through Interstate Agreement" and "The Oil and Gas Statutes Annotated" as well as being the author of many short articles dealing with these related subjects. He is now a member of the law firm of Goodwin, Smith & Ely, located in the Shoreham building, Washington, and is in position to know the current situation fully. He is also a member of the A. I. M. E. Stabilization Committee. We feel we are especially fortunate to offer an article from him for the A. I. M. E. Forum on the oil code and its relation to stabilization.

(Signed)
EARL OLIVER.

1. The Issue

On July 13, 1933, the petroleum industry submitted its "code" under the National Industrial Recovery Act. That act is essentially an offer of a compromise to industry backed by the threat of compulsion. The Government asks that each industry agree upon minimum wages and maximum hours of labor, and in return offers a limited exemption from the antitrust laws. The compromise is to be expressed in the form of a code of fair competition. Speaking broadly, the code drafted and offered by the industry, in so far as it affects stabilization of the crude supply, offers five things and asks four: It offers to create a national planning committee; it offers minimum wages and maximum hours, the former averaging between 40 and 47 cents per hour and the latter 40 hours per week. It offers its employes collective bargaining. And it offers to permit the Government to fix maximum prices for oil and its products. In return it asks that the Federal Government restrict production to market demand as estimated by the planning committee; that it permit competitors to enter into agreements to the same end; and that drilling shall hereafter require the President's permission, provided that wildcatting shall not be "prohibited." The marketing division of the code is longer, but does not directly concern stabilization of production.

This code subjects the industry to greater regulation than it has ever submitted to before. In return, if actually made operative, it offers a better chance for stability than the industry has ever had.

But if the code is approved, will the industry get what it is bargaining for? Has the Federal Government the power to make good an undertaking to enforce this code's restriction of production to market demand? Can the Government sustain minimum price decrees in court? Can it control drilling? And if not, will the industry be satisfied with its new burden of minimum wages, maximum hours of labor and perhaps maximum prices, lightened by a new freedom of competitors to agree to limit production, and aided by a new national planning committee? This code contains no dissolution or withdrawal clause; it can be amended only with the President's consent.

2. The Act

Space limitations forbid a detailed analysis of the act. Assuming that the act contemplates this kind of a code (although the statute itself says nothing about restriction of production or price fixing or restriction on new plant investments such as drilling), the code, if approved, apparently will rely chiefly on Sections 3, 5 and 9 of the statute.

Under Section 3 apparently approval of a code purports to accomplish four results:

1. Under Subsection (b) a violation of the code becomes automatically a violation of one of the antitrust laws, the Federal Trade Commission Act. The antitrust laws are suddenly made weapons to enforce, rather than abate, co-operative action.

2. The Federal district attorneys are made available to keep the code water-tight, through equity actions.

3. A violation of the code becomes a violation of a new criminal provision, quite aside from the Federal Trade Commission Act. Under Subsection (f) violators of the code itself can be fined $500 for each offense.

4. The President may issue regulations under Section 10; violation of which is punishable.

In as much as the industry has come forward with a voluntary code, we will assume that Subsection 3 (f) will not become operative; that is, the President need not "prescribe and approve a code . . . . upon his own motion."

Section 5 exempts approved codes from the antitrust laws during the two-year period that the act is in force, and 60 days thereafter. Here the oil industry is offered that missing cog whose absence wrecked the machinery exhibited in 1929 to the Federal Oil Conservation Board.

Section 9, the "oil section," authorizes the President to prohibit interstate shipments of hot oil, initiate proceedings to divorce pipe lines from monopolistic holding companies, and initiate pipe line rate cases before the Interstate Commerce Commission.

3. The Code

Let us turn from the act to the code, bearing in mind that we are to examine an instrument which, if it is approved by the President, the act promises shall be enforced by the Government's district attorneys in equity actions, shall be re-enforced by the President's regulations, and shall be backed by penal provisions against violation of either the code, the regulations, or the act.

The code itself is divided into six articles, preceded by a statement of purposes and followed by a series of appendixes. Article I deals with minimum wages and maximum hours; Article II with production; Article III with natural gasoline; Article IV with refining; Article V with marketing; and Article VI with the creation of administrative machinery.

The article on production consists of six sections. Section 1 states that the allowed production in the United States, plus imports and withdrawals from storage, shall equal the domestic consumption plus the demand for export. Assuming that this equation will indicate a crude petroleum demand, the section provides that these crude oil requirements shall be allocated between current production, withdrawals from storage, and imports. That portion apportioned to current production is to be allocated among various producers, areas, properties and wells, "all as determined or approved by the President." Production in excess of such maximum allotments is deemed to be an unfair method of competition. Anyone receiving crude petroleum produced in violation of the code, or receiving the products of such petroleum for transportation, storage, refining or purchase, shall be guilty of unfair competition. Allotments are to be made with due regard to the conservation of oil and gas. Furthermore, allotments shall be made in such form as to preserve wells of small production. These objectives have a familiar ring; Report V of the Federal Oil Conservation Board recommended such a program, and recommended specific machinery to effect it. When we come to Article VI of the code we shall see wherein the machinery of the two programs differs.

Drilling and Price Fixing

Section 2 deals with drilling. It is said, first, that wildcatting should not be prohibited because the future maintenance of the petroleum supply depends on future discoveries of new pools. But when a new discovery is made there shall be no further drilling until a plan for the development has been approved by the President. This is the result accomplished on public lands by Secretary Wilbur's regulations of April 4, 1932, reopening the public domain to prospecting on the prospector's stipulation that on discovery production shall be deferred until approval of unit operation plan by the Department. The third statement in this section is without parallel in any conservation statute save that of the province of Alberta: "No person shall be permitted to commence the drilling of a well for petroleum within the United States without first obtaining a permit for such drilling from the President. Such permits shall be issued subject to such conditions and restrictions as the President may approve." The constitutional basis? "In order . . . not to injuriously affect interstate or foreign commerce" by production in unreasonable amounts.

Section 3 represents the industry's first voluntary venture into that alien territory inhabited by the public utilities. It proclaims that the sale of petroleum "below the actual cost of production" is contrary to conservation, is conducive to waste, tends to create monopoly, is often an unfair method of competition, and injuriously affects interstate commerce." To avoid these evils the President is requested to fix minimum prices for petroleum, and in order to protect consumers he may also fix maximum prices.

Subsections (a) and (b) cover this major retreat from an old position by minor skirmishes. Publication of present prices is required monthly, reports of purchases must be made to the President, and the payments of prices other than those published by the purchaser are labelled unfair competition.

Section 5 brands as "unfair competition, injuriously affecting interstate commerce" the importation of crude and its products "in large quantities" and requests the President to restrict imports to the level of the last half of 1932, and to allocate them among importers.

Section 6 is captioned "Other Provisions." It is divided into seven paragraphs. Paragraph (a) states that it shall be lawful for producers in any pool to restrict their production by agreement, and that an agreement controlling two-thirds of the production (upon approval by the President) shall become enforceable against the remaining minority; and that it shall be unfair competition for any person, whether a party to the agreement or not, to produce in excess of the rate of production allotted to him.

Paragraph (b) deserves particular attention. It brands as unfair competition the production of crude or any product in excess of the producer's allotted share of the demand; so also the dumping thereof in interstate or foreign commerce, or in intrastate commerce in such manner and to such extent as to injuriously affect interstate or foreign commerce "under circumstances reasonably calcu-

lated in economic effect to bring prices below the normal and average cost of production."

Paragraph (d), also important, authorizes agreements between competitors for the purpose of accomplishing the objective of the code, subject to the disapproval of the President.

Paragraph (e) disclaims any intent to compel unit operation of any pool "unless all of such operators owning all of such leases consent to such unitization." Contrast this with Section 6 (a).

Section 6 (f) recites that co-ordination of Federal and state agencies is desirable, and respectfully suggests that the President request the state enforcement officers to adopt as their own the President's program, in order that the complete power of both Federal and state interests may be exerted. When the President's program has been adopted by the state officials it shall be deemed a violation of fair competition to violate the rules and orders of such state officials. This clause is an echo of that movement toward co-operation between the Federal and state governments which has been gathering momentum for four years.

This disposes of Article II.

Articles III, IV, and V, relating respectively to natural gasoline, refining, and marketing, have only an incidental bearing upon the stabilization of supply and demand whose discussion is contemplated in this forum.

Article VI provides the machinery for the industry's functioning. An emergency national committee is created consisting of 55 men, including a chairman. It is the industry's planning committee. An emergency executive committee of the emergency national committee is to struggle not only with the weight of its own name, but also with the problems of the whole committee when the latter is not in session. It may make rules and regulations, whose effect is not stated. The committee is authorized to make and publish forecasts, "especially of future demand."

4. How Much of the Code Can Be Enforced?

Assuming that the code is accepted as it stands, how much of it will hold water; and will the water-tight compartments be worth the purchase price represented in the necessary labor clauses? We suggested some of these questions at the outset. More specifically:

1. How will the price fixing power granted to the President by Section 3 (b) of Article II function? Does this mean something like an Interstate Commerce Commission rate case on each occasion that a change in gasoline prices is sought, with trips to Washington and delay so formidable that the record is obsolete when the matter is decided?

2. On what basis are rates to be set by the President: "Actual cost of production" can be determined only by burrowing into the operations of a large number of companies and possibly into their capital structures. The Kettleman Hills operators are at present resisting an effort by the Interior Department to sustain royalty prices based on the department's conception of the companies' costs and returns. Is the Kettleman situation to become nationwide, and extended to refined products? Price-fixing is a two-edged sword, and the Government is a muscular swordsman.

3. What does the second price-fixing section, 6 (b), mean: What are "circumstances reasonably calculated in economic effect to bring prices below the normal and average cost of production"? In the case of a depleted field does this mean the average cost over the field's life, or the present-day cost of lifting the oil? If a flush field and a depleted field are supplying the same market, will it be unlawful to sell flush production at less than the competing cost of settled production?

Is the public to be asked to pay prices which will allow the present high costs of competitive offset drilling to continue? Earl Oliver has effectively pointed out the abnormal level of costs necessitated by the capture theory. Yet this code not only fails to exert pressure toward unitization, but specifically disclaims any such intention. It seems a fair bargain to require a movement toward conservation, just as the public works section of the act requires that municipalities seeking Federal construction aid shall balance their budgets.

4. Can the Federal Government, without relying heavily on the state, make good on its acceptance an invitation to enforce a code restricting production?

The petroleum code is based on the premise that the Federal Government can stop movement into interstate commerce of products which will cause undesirable economic displacement. This is a curious converse of the problem which has been in the courts in such cases as West vs. Kansas Natural Gas Company. Heretofore, the issue has been whether the state might, on its own motion, hold its natural resources—after production—out of interstate commerce, for its own citizens. The state has universally lost. Here that issue is reversed. The question presented here is whether the United States may say to a state that that state may not thrust into interstate commerce a quantity of oil in excess of the Government's estimate of its reasonable share of the nation's market. So long as the state's policy is in accord with the restriction, the recalcitrant producer is not apt to fare very well in combating the code. But if the state authorities want a higher production quota than the President's, there will be trouble. And if these agencies are reduced to subordinate position under this code, after the years that the industry has spent in building up the structure of their authority, any conflict between the state's and the code's determination of lawful production will afford a vulnerable spot.

Every nationwide curtailment program reduces itself eventually to the simple question: What will Texas do? Its potential production dominates the industry. If the public policy of that State, expressed through its statutes and the orders of its railroad commission, results in settling an allowable for East Texas of, say 800,000 barrels, whereas the President, on recommendation of the emergency committee, decides that production should be 400,000 barrels, which figure will prevail and how is the lower Federal figure to be enforced? Suits by the Federal district attorneys to enjoin violations of the code, authorized by Section 3 (c), will encounter delays, if not constitutional objections, rendering ineffective any national program in which the state authorities are not given an opportunity to voluntary co-operate.

In reserve lies the power under Section 9 of the act to stop movements of "hot oil"; but this is defined as oil produced in violation of "state laws."

In the writer's opinion, the effectiveness of the code will depend more upon the humble Subsection (f) of Section 6 of Article II, than upon any other language in the document. It authorizes the appointment of state authorities as Federal agents, and invites the state authorities to adopt the Federal program as their own "in order that the complete power of both Federal and state governments may be exerted in the premises."

5. Can the Government also make good on an undertaking to restrict new drilling? The police power of the state, again, looks like a more solid footing than the Federal authority over interstate commerce. This is not commerce; it is not even production in anticipation of commerce; it is plant investment which may never be used in commerce. But it may alter physical conditions underground and thereby warrant the state in protecting the correlative rights of the other owners of the pool, through the "drilling-district" method or otherwise.

In the paragraphs above we have attempted to point out the possibilities of a "failure of consideration," so to speak, which may result in leaving the labor and wage and maximum price provisions operative, but making dead letters of the production-control, drilling-control, and minimum-price desiderata. Can these objectives be made more certain by changes in the code?

We know from experience that most of the things sought by this code can be accomplished by some kind of governmental agency—save price-fixing, which is a new venture.

First, the Federal Oil Conservation Board, since 1930, has periodically sponsored forecasts by economic committees such as are planned here. The estimates of total domestic demand carried in the first report of a board committee yielded a percentage of error of 2.33 as against the actual figures. The second report erred by 2.39 per cent; the third by .75 per cent; the fourth by 2.61 per cent; the fifth by 1.34 per cent; the sixth by 1.04 per cent. During the period of these forecasts the prices of crude oil and of gasoline each varied over very wide ranges; there was nothing approaching a fixed price level. While it has been urged that demand does not exist in a vacuum, dissociated from a fixed price, the record of accuracy of these forecasts speaks for itself.

Second, it has been demonstrated that an individual producer can be forced to restrict his production to accord with a governmental determination of market demand. This settement is somewhat broader than the precise issue presented in any case, but accords with the effect on the producer under the Oklahoma statutes sustained in the Champlin case. Heretofore the authority to effect the restriction has been found in the police power of the state, based either upon the state's power to protect the correlative rights of common owners, or upon its interest in its natural resources. The proposed petroleum code relegates the state's police power to a background position, and relies primarily upon the Federal Government's power over interstate commerce. That power has never been tested in restriction of production of oil and gas.

If the demand can be accurately forecast, and if the states have the police authority to restrict production, and if the Federal Government has the authority to restrict imports (an authority specifically conferred by Section 3 (c) of the Industrial Recovery Act) the problem is one of correlating these forces. The petroleum code, like the proposal for an interstate compact heretofore presented, would set up a national planning committee which would forecast demand and allocate it among the various sources of supply: Crude production, withdrawals from storage, imports, and blended products. Like the agency proposed under the interstate compact plan, this agency would also allocate among the various producing states and areas, that portion of the supply to be furnished by new crude. The code differs from the interstate compact chiefly in two respects: First, in that the states are not represented on the planning committee, and second, the enforcement of the production quotas is undertaken by the Federal Government, lacking any police power to protect natural resources or correlative rights, and relying solely on the commerce power. As pointed out in other parts of this paper, the proven police authority of the state appears to be too valuable an ally to consign to a rearguard position. Can it be brought to bear in aid of this code?

5. Changes

As the code will be the target of a thousand suggested amendments, the following are added to the docket. The writer claims no novelty for them: others have suggested various similar amendments and some of those below can be traced to Report V of the Federal Oil Conservation Board.

1. Restrict the code's present scope to Articles I, II, and VI, dealing with labor, production and administrative power. These are emergency provisions. The code can be cut to about four pages. Defer until later the companion provisions dealing with marketing; they will confuse the objectives now so concisely crystallized in the production and labor phase of the code.

2. Even if Section 3 (b), the price-fixing clause, survives, the language under Section 6 (b) which brands as unfair competition the dumping of petroleum "under circumstances reasonably calculated in economic effect to bring prices below the normal and average cost of production," appears to invoke a standard too vague to support. The defeat may encourage an attack upon the whole code. It is suggested that provision be made instead for the periodical determination by the President of reasonable costs of production for various areas and the proclamation of these figures. Whether or not any price fixing attempt is valid, at least the change suggested would have the advantage of definiteness.

3. Administrative machinery: It is suggested that each of the states (numbering four or five) yielding more than, say, 5 per cent of the domestic petroleum production during the preceding calendar year be granted one representative, preferably a member of the state public service commission, upon the emergency executive committee, and that that committee also include representatives appointed by the President to voice the interests of consumers. In as much as Section 3 (b) of Article II authorizes the fixing of minimum prices for the protection of consumers, it appears to be fair that they be represented in determining what these prices may be. Representatives of the oil states and consumers should likewise be members of the national committee as a whole.

4. Refining and marketing: The national committee may properly be authorized to investigate trade practices and submit regulations for the

Equipment Manufacturers Take Steps Looking to Co-operation in National Recovery Program

Leaders in the manufacture of oil industry equipment have taken steps looking to co-operation in the national recovery program launched by the Government in Washington. Plans under discussion are expected to assume definite shape at a meeting to be held in Dallas, Tex., August 3 and 4, when organization of the American Petroleum Equipment Suppliers Association will be effected.

The call for the Dallas meeting grew out of a conference of equipment men in Houston, Tex., at which S. P. Farish, of the Reed Roller Bit Co.; S. P. Brown, of the Hughes Tool Co., and Frank Carothers, of the Norvell-Wilder Supply Co., were appointed a committee to get into contact with oil supply men throughout the country, impress upon them the need of united action and arrange for a meeting of representatives of oil equipment houses. This committee, of which Mr. Farish was made chairman, sent out the following letter:

"Believing that a critical stage of the Roosevelt recovery program will come within the next month or six weeks, a meeting was held yesterday and this committee was instructed to extend to you a cordial invitation to meet at the Baker Hotel, Dallas, Tex., on August 3 and 4 for the purpose of forming the American Petroleum Equipment Suppliers Association.

"The National Recovery Act, revolutionary as it may be, is now being interpreted, and a better sense of direction indicates that we, as a group with common interests, ought to get busy collectively as provided in the recovery act.

"The law requires that we form a representative trade association, in order to function as a group for self-government, and also to obtain a legal status with the National Recovery Administration, and other related associations.

"The American Petroleum Equipment Suppliers Association must adopt a code of fair competition and have it certified by the President, and it will then become binding upon the association and the recalcitrant minorities alike.

"Problems of the oil supply industry are unique and cannot be solved by persons or groups not familiar with conditions in our industry.

"Even though you, as a unit manufacturer or distributor, may belong to another association, if any considerable part of your business is oil supplies, materials or machinery, then let us earnestly ask that you have a responsible representative at the meeting to share the responsibilities and derive your part of the benefits.

"Bring your group-minded ideas to the meeting and let's get together in the spirit of fair play and good will, that is possible under the recovery act.

"In the spirit of due regard for law observance, state and Federal, and to support the President's economic recovery program, it is hoped that you will immediately wire the name of the person or persons who will represent you at the Dallas meeting."

Expected to Remedy Troubles

The belief is expressed that the association about to be formed will not only contribute its share in the movement for industrial revival set in motion by President Roosevelt, but it also will provide an agency through which unhappy conditions in the oil supply business may be remedied. The demoralized state of the petroleum industry has been reflected in the manufacturing establishments which serve it. The rigors of the depression from which the country now is emerging have left their mark upon many concerns. Trade practices which would not have been considered in normal times began to be adopted by the smaller and less responsible manufacturing institutions, adding to the troubles of those houses which sought to preserve high business codes.

It was explained that the scope of the new organization is expected to include all the common problems of the equipment manufacturers and distributors, such as employment and wage situations. Consideration of working hours and pay in the equipment industry will become a proper subject for the association to deal with owing to the fact that these subjects figure heavily in production costs and the prices paid for material and equipment by the users. By co-operation with the President's program any unfair competition growing out of discrepancies in working hours and pay should be eliminated.

The proposed code of the new association lays down a program for the elimination of unfair competitive practice, reduction and relief of unemployment, establishment of fair and adequate wages, enlargement of purchasing power of persons related to the equipment industry, improvement of standards of labor, and protection of the consuming public from excessive prices, to the end that the supply industry may be rehabilitated and do its part in the national recovery program.

Emphasis was laid upon the fact that organizations of oil industry supply manufacturers which are being formed in various places throughout the country will have to become affiliated with the national organization in order to accomplish ends desired.

California Men Organize

The most important of local organizations thus far is probably the one organized two weeks ago in the headquarters of the California Oil and Gas Association in Los Angeles, with a view of regulating trade practices, etc., in the equipment manufacturing and sales branches of the oil industry. The meeting was called by Jack Crawford, president of the Republic Supply Co. of California. Among other leading oil equipment men associated with Mr. Crawford in promoting the movement for co-operation in the national recovery movement were: David Faulkner, of the National Supply Companies; Erwin Burns of the Baash-Ross Tool Co.; Lester Keim, of the Oil Well Supply Co.; Harry Hillman, of the Hillman-Kelly Co., and Mr. Whitney of the Baker Oil Tools, Inc. The organization meeting was attended by 64 men well known in the oil equipment line, including representatives of every important oil supply house in Los Angeles.

A vote taken showed the men present were unanimously in favor of organizing for united action. The following officers were elected: President, Jack Crawford; vice president, John Grant, of the Grant Tool Co.; treasurer, Joseph Smith, of the Emsco Derrick & Equipment Co.; secretary, H. F. Emme, Republic Supply Co. It is expected that this organization of California men will become affiliated with the proposed American Petroleum Equipment Suppliers Association.

President's approval. It is assumed that they will follow the draft on these items submitted on July 13. Perhaps, also, some form of control of refinery output can be recommended by it. That presentation should, in the writer's opinion, be deferred until after the production and labor provisions of the code have been accepted by the Industrial Recovery administration.

5. Compulsory clauses: Section 10 (b) of the Industrial Recovery Act requires that every code must contain an express provision to the effect that the President may, from time to time, cancel or modify any order, approval, license, rule, or regulation. Absence of this clause is pointed out in Mr. Byles' letter which transmitted the code.

6. Imports: It appears preferable that the limitation on imports, instead of being fixed at a flat figure, be left to the President's discretion. During some periods the 1932 figures used in the code may seem unduly high and during others may seem unduly low.

7. State co-operation: Section 6 (f) of Article II might properly be elevated to the dignity of a separate article, and more detailed provision made for the participation of state authorities in the planning committee as well as in carrying out the plans. It will be desirable to tie in as closely as possible the responsibility as well as the established powers of the state, so that an attack upon the curtailment of production directed under the code will have to overcome the hurdle of the state's policy as well as the Federal policy, the police power as well as the commerce power.

Thus Section 6 (f) might be so expanded as to constitute, upon approval by the President, an invitation by him to the states for enactment of this code as a basis of state legislation, and to authorize their public service commissions to act as members of the national planning committee. Thus the interstate compact program could be correlated with this new venture in Federal authority.

8. No reference is made in this code to Section 9 (c) of the Industrial Recovery Act, which, specifically authorizes the President to prohibit transportation in interstate or foreign commerce of petroleum in excess of the amount permitted to be produced or withdrawn from storage by any state law or valid regulation. To take advantage of the limited language of this section of the act, it appears desirable that the state production quotas which are set by the President shall also be prescribed separately by the state authorities; apparently this is contemplated by Section 6 (b) of Article II.

9. Tax evasion: This code could fulfill a major function if it ordered refiners to report all shipments, and directed the central committee to keep state authorities advised of consignments to the respective states, for the purpose of checking movements of bootleg gasoline.

10. Conservation: Because the law of capture is claimed to originate most overproduction problems of the industry, it might be fitting to add an article defining certain production methods as unfair competition: Blowing gas to the air, producing at an excessive gas-oil ratio, drilling at unreasonable intervals, drilling unnecessary wells, failing to protect productive strata, failing to allocate a restricted outlet among offsetting properties, and so on. If the code is to aid conservation, let it be more specific.

6. The Result

If the code is approved, whether or not in amended form, the net result to the industry can be forecast within certain broad outlines:

1. The industry will be committed to minimum wages, maximum hours, and the right of collective bargaining on the part of its employes.

2. It will have for the first time a national planning committee in official operation, adequately financed, forecasting demand and recommending the adjustment of supply.

3. The actual curtailment of production is likely to remain in the hands of state officials, possibly re-enforced by Federal appointments, and the national planning committee is not apt to have any very direct way of enforcing its quotas against a recalcitrant state. It will have a better chance, the more nearly the interstate compact plan is approximated; i.e., by making one of each of the state public service commission members exofficio members of the national planning group, and bringing them into direct responsibility on the President's invitation.

4. Federal control of new drilling is likely to be ineffective.

5. Federal control of interstate movements of oil produced in violation of the code offers excellent possibilities, provided that the state agencies are willing to promulgate the code quotas as their own. A code quota lower than a state-made quota will be difficult to enforce by any weapon.

6. The price-fixing clauses, if they appear at all in the code as approved, are not likely to be enforceable in the industry's favor.

7. The industry will have limited freedom from the antitrust laws in two respects: Curtailment in accordance with the code itself will be lawful, and also supplementary agreements between competitors may be filed with the President, and, if not disapproved, will remain valid.

Is this residuum valuable, after the code's more spectacular and less valid elements evaporate? Without price-fixing, without much direct Federal control over producing wells, and without Federal control over new drilling, it will still be a revolutionary step forward. It goes far beyond what the industry asked of the Oil Board and the Attorney General in 1929. It gives not only limited freedom from antitrust laws, but also the assurance of Federal support against recalcitrants. With a few changes in composition of its directing agency, plus an invitation to the states to co-operate, it becomes essentially the interstate compact proposal modified to give the industry a greater hand in its operation.

Bringing in the states and their police powers in the manner suggested may add something to the effectiveness of that sovereign the aid of whose authority is now sought; a sovereign that, until 11:55 a.m. of June 16, 1933, was commonly thought to possess delegated powers only.

Company in East Texas Installs Central Electric Power Generating Plants on Various Leases

By L. G. E. BIGNELL
Petroleum Engineering Editor

One of the larger companies with interests in East Texas has worked out plans for mechanical production of oil in that field along somewhat different lines to those generally followed. Its engineers have recognized two classes of pumping duty, the light east side wells and the heavy wells located along the western margin of the field. This condition seems to be generally agreed upon by operators who have leases scattered throughout the field, and many of them have decided upon central powers for the light wells and standard rigs or self-contained pumping units for the heavy wells.

It is at this point where this particular company has departed from the general practice. Instead of equipping its wells with central powers it has decided to install central electric generating plants and so lay out its leases that the duty of the pumper will be much the same with this type of installation as it would be with central pumping powers.

That is, the duties of the pumper in either case are devoted largely to operating the power unit. With the central pumping power the wells are hooked on or off at the central plant. With the central electric plants it is also planned to have the pumper devote most of his time to the operation of the engine and generator as the wells are all to be equipped with automatic timing devices that will start them pumping and stop them at predetermined intervals. This detail will be described more fully later.

In making this decision the fact that there were a number of 165-horsepower twin-cylinder gas engines available from dismantled natural gasoline plants had a very direct bearing. There has been a tendency toward reduction of natural gasoline plant capacity and this has and will continue to release for other uses engines of this type. This company now has definite plans for 19 of these central electric power plants with seven others tentatively planned.

The plant will consist of one 165-horsepower twin-cylinder 190 r.p.m. gas engine driving one 100 k.w. 480-volt alternating current generator with direct connected exciter. Power from engine to generator will be transmitted by truncated "V" type belts running over the normal type of crowned pulley on the engine and the grooved sheave on the generator. The generator is mounted upon a sliding base and the whole plant enclosed in a sectional steel building with concrete foundations and floors.

Gas Supply

One of the problems to be worked out with this type of station was securing an adequate and constant gas supply under all conditions. When the six wells on the average lease serviced by one of these plants are all pumping there will be about 350 cubic feet of gas per barrel of oil available at the oil and gas separator. All wells will connect into a common separator set centrally on the lease and adjacent to the central lease storage tank battery.

The trap pressure will be maintained at a little above atmospheric and the gas delivered to the engine through the usual type of regulator. There will be ample gas available for the engine which will require about 11 feet per horsepower hour when operated with an economizer. This would mean 1,815 feet per hour to pump six wells and it is estimated that many of the wells will secure their allowable, at least during the early pumping life of the field, in one or two hours.

To start the engine, it is anticipated that there will be ample gas in the pipe lines between the separator and engine and between the casinghead and separator to start the plant. However, to avoid shortage of gas at any time some gas will be made available to each plant in a part of the field from a gas well on one of the leases. Also a connection will be made to the residue gas system from natural gasoline plants where possible.

It is anticipated that when the wells are on the pump there will be a tendency for gas to accumulate in the upper part of the tubing and casing while the well is shut down. Connections will be made between the casinghead and the gasoline manifold so that this gas will be ready for use in starting the plant.

It is believed that there will be some gas available for delivery to the natural gasoline plants and from those plants there will be a return of residue gas to the lease in accordance with the usual gas contracts.

Electric Distributing System

The central generating plant will be installed on leases having from six to eight wells each. These wells are all located within a radius of 1,500 feet of the plant. At the wells geared pumping units will be installed powered with 440-volt A. C. motors rated at 25/15/9 horsepower. It is planned to use either 15 or 9 horsepower for pumping the wells. The third change in power in the motor was secured at little additional cost and this type motor selected so that in case of emergency ample power for any well would be available.

The motors are all 1,800 r.p.m. speed and power is transmitted to the geared pumping unit by use of "V" belts. These belts run in comparatively small diameter grooved pulleys and it has been found that by shifting the relative position of these pulleys as much as 40 per cent speed change can be made in the pumping unit.

As the width of the grooved pulleys is increased or decreased the belts will run deeper or shallower in the grooves. With the belts changing their positions in the grooves only a half-inch radius would cause the effective diameter of the pulley to vary 1 inch and on 10-inch diameter pulleys the variation on each pulley will give large speed changes.

To transmit the electric current from the power plant to the wells waterproofed conductors will be used. These conductors are composed of No. 0 to No. 4 electric wire covered with alternate layers of rubber, lead and jute. These lines will be laid in the ground from 18 to 24 inches and being of waterproofed construction it will not matter whether the area is flooded part of the year or not. In fact this type conductor can be laid across streams or through swampy ground without difficulty.

To lay the line, a special type of plow is used to make a furrow the required depth. The conductor is then laid in this trench and the backfilling is completed all in the one operation.

The conductors terminate in weatherproof safety switch boxes at the wells. When the door on these boxes is opened the power switch is automatically opened and the power cut off.

In the switch box there is installed a telecron clock that may be set for any number of starting and stopping positions. By the use of this device the pumper can start pumping on any well at any predetermined time and continue pumping as long as he estimates it is necessary to secure the daily production. The wells can be started at different times to create any desired load upon the system that is best suited to operating conditions.

Enlarging Central Plants

In laying out this system provision has been made to permit of the addition of another engine and generator if it later is found necessary. The transmission and switch system is heavy enough to stand this added load so it will only be necessary to install the engine and generator and hook it into the present system to deliver the additional power at the wells.

In this system no transformers are required for the current is generated at 480 volts and the motors are 440 volt. This simplifies the layout and reduces operation to a minimum of detail. The pumper will therefore be able to take care of the entire lease without any assistance.

For cooling water for the engines one 500-bbl. tank is set at each power house and the water is circulated through the system by a 3-inch centrifugal pump. It has been found that the water available for this purpose is quite satisfactory and no chemical treatment is required.

The area in which these plants will be erected is for the most part low land that is flooded during part of the year. The underground conductor system of distributing current was chosen in spite of this condition largely because by burying the wires trouble from lightning will be eliminated. It is not certain that all lines will be buried as some leases will probably be equipped with overhead distributing system.

For cleanout work at the wells it is planned to use winches mounted on trucks or tractors and powered by the engine of the transporting unit. It was decided not to use electric motor powered cleanout units because of the heavy load such a unit would throw upon the generating plant. Without using much larger engines and generators this load estimated at 40 horsepower per cleanout unit would impose too heavy a duty upon the 165-horsepower engines and their generators when the wells are pumping. It is therefore simpler and more economical to use the truck or tractor type winch cleanout units.

Other Types of Equipment

There are about 264 wells included in this system and the type units selected for them have been divided about as follows:

Forty standard steel front pumping rigs, with 40-horsepower Cooper-Bessemer gas engines.

Sixty-three wells pumped by back side take-offs powered by above standard rigs.

Twenty 5½-inch Lufkin pumping units engine powered.

One hundred and fourteen Emsco No. 10 self-contained pumping units with electric motors.

Five Sullivan pneumatic cylinder pump heads air operated.

One geared central power for seven wells, gas engine driven.

Fifteen miscellaneous pumping outfits, mostly for temporary use only.

It is planned to install 19 central electric generating power plants with 165-horsepower twin-cylinder Cooper-Bessemer horizontal type gas engines, and one electric plant with 110-horsepower gas engine at once. Provision is made for seven additional 165-horsepower plants if conditions at the leases later justify it.

After checking other Woodbine sand fields for performance it was decided that the fluid to be handled would increase at about the following rate:

Pumping year—	Barrels Daily oil	Barrels Daily water	Barrels Total fluid
1	140	40	180
2	60	130	190
3	32	168	200
4	24	196	220
5	23	237	260
6	23	267	290
7	22	278	300
8	20	330	350
9	20	410	430
10	20	500	520
11	20	530	550
12	20	580	600

The ratio of water to oil therefore increases from the first pumping year to the twelfth pumping year from 2 to 29

(Continued on Page 30)

Gulf Coast Port Shipments During May Show Increase of 1,666,272 Barrels

HOUSTON, Tex., July 22.—Reported shipments of oil, including crude and refined products, from Gulf Coast ports during May totaled 21,621,479.86 bbls., an increase of 1,666,272.09 bbls. A total of more than 1,000,000 bbls. additional is estimated to have been moved from terminals not reporting. The increase was entirely in coastwise movements, this gain more than offsetting the decline in export shipments of both crude and refined products. Shipments by companies and terminals follow:

GULF COAST WATER SHIPMENTS, MAY, 1933

Company and terminal—	Crude Coastwise	Crude Export	Refined Coastwise	Refined Export	Total
Atlantic P. L. Co., Atreco	1,138,751.51	.....	.....	.....	1,138,751.51
Atlantic P. L. Co., Harbor Island	355,403.38	.....	.....	.....	355,403.38
Atlantic P. L. Co., Texas City	473,037.91	.....	8,984.16	.....	482,022.07
Gulf Ref. Co., Port Arthur	180,494.30	.....	2,032,923.23	28,360.23	2,241,786.31
Humble O. & R. Baytown	648,116.00	.....	2,124,883.46	495,152.37	3,268,145.83
Humble O. & R., Harbor Island	2,418,179.00	.....	.....	.....	2,418,179.00
Humble O. & R., Ingleside	100,780.00	.....	.....	.....	100,780.00
Humble O. & R., Texas City	448,225.00	.....	.....	.....	448,225.00
Magnolia Pet. Co., Beaumont	893,672.69	.....	1,777,624.45	.....	2,671,297.14
Pure Oil Co., Smiths Bluff	485,426.00	.....	560,557.00	.....	1,045,983.00
Shell Pet. Corp., Houston	302,845.58	165,114.76	717,012.13	166,394.53	1,351,367.00
Shell Pet. Corp., Norco	.....	.....	294,751.95	96,644.17	391,396.12
Standard Oil (La.), Baton Rouge	134,938.00	72,955.00	870,292.00	164,632.00	1,242,917.00
Texas Co., Port Arthur	1,457,885.00	556,056.00	2,183,641.00	413,605.00	4,611,232.00
Total May	8,899,751.87	795,167.76	10,570,773.43	1,366,782.30	21,621,479.86
Total April	7,425,501.25	351,650.04	10,606,301.53	1,571,734.96	19,955,207.77
Difference	1,474,250.12	443,497.72	35,532.09	215,042.66	1,666,272.09

The only reason for doctoring gasoline is because it is sick

Dubbs cracked gasoline is never sick It's alive and kicking with power (but not knocking)

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Best of Equipment Available Will Be Necessary to Secure Future Oil From East Texas Wells

The East Texas Field can properly be considered as made up of innumerable sand lenzes all interconnected and charged during past geological time with oil and gas. Water contact was across the base of a portion of this area and it is evident that the original reservoir pressure was created by the hydrostatic head of this Woodbine water. It is assumed that water will gradually fill the voids left in the formation as the oil and gas are withdrawn and this water will also serve as a repressuring medium and drive oil ahead of it in the formation.

Whether great quantities of water will have to be removed with the oil is a question upon which the operators are divided into two classes, those who believe that the water flood will cause a condition demanding that both oil and water be removed as rapidly as it comes into the hole, and those who believe that the water will not appear in the wells in the major portion of the field for some time, and when it does it will be best to remove the oil with the least possible amount of water.

Based upon their individual opinions of this basic problem engineers are recommending various kinds of mechanical equipment for East Texas wells. The great majority of this equipment is being selected with care and chosen for a continued service for the next 10 to 12 years.

Working Barrels Important

Regardless of what type of pumping equipment is at the mouth of the well the class of working barrel at the bottom of the hole will play a very important part in determining future rate of production. This item of equipment will have a direct bearing upon production costs and if properly selected it may save the investment in additional surface equipment, also permit of higher recovery of fluid at lower lifting cost per barrel.

Manufacturers of working barrels and pumps have had about 50 years of experience to draw upon in designing their equipment and there are so many reliable companies now making this type of apparatus that there is no reason why the East Texas operator should not be able to select efficient equipment.

In general pumps may be divided into two classes:

First. Those in which the seal is maintained by true metal-to-metal principle in plunger and barrel.

Second. Those in which the plunger is constructed of nonmetallic material operating in a metal barrel.

Cup Pumps

Practically every type of oil well pump is some form of a "cup" pump, that is, there is a traveling valve to permit of the fluid entering the working barrel and a cup-shaped plunger. This plunger is moved up and down in the working barrel by the power transmitted through the string of sucker rods attached to the walking beam or other mechanical device at the surface.

Generally speaking, the cup pump is designated as a plunger into which leather or some other nonmetallic type of cups have been fitted. It is the oldest type of apparatus used for this purpose and it is probably adapted from similar equipment used in water wells.

The nonmetallic material cup is used in this class of pump to form a seal to prevent the escape of the fluid downward as the plunger is on its upward stroke. The sealing is accomplished partly by the fit of the cups in the working barrel and partly by the tendency of this nonmetallic material to expand as pressure of the fluid load above it is exerted.

The pressure exerted on the nonmetallic cup will tend to create friction between the walls of the working barrel and the surface of the cup in direct proportion to the weight of the fluid column in the tubing. This principle has been so generally applied to pumping that many operators have come to consider it as covering the only practical method of pumping wells.

That cup pumps work satisfactorily is so generally known that many operators in East Texas are regarding their problems there as easily solved by their use and they believe that for some time to come all wells will be limited in their daily rate of production and therefore any type pump is good enough.

There is no question about cup pumps securing the fluid and it is also quite probable that for some time to come wells so equipped will get their daily allowable with this type of equipment and apparently at a satisfactory lifting cost.

The problems of producing East Texas wells will probably not be so simple of solution as might be assumed on first consideration and it may therefore be well to give attention to other conditions than simply putting in equipment that will suffice for the time being.

General Problems

As stated in the opening paragraphs, this field is made up of numerous lenzes of sand charged with oil and each lenze interconnected. From the time it was discovered there has been a tendency on the part of some operators to disregard good production practice in their desire to secure the maximum amount of oil in the least possible time from their wells. Such practice has undoubtedly dissipated a large amount of the reservoir energy wastefully. It has tended to reduce the wells in the field to a pumping stage much earlier in their life than would have been the case if the reservoir energy had been properly used.

Having gone through this experience of wasteful production it therefore seems that the operators should now co-operate in adapting future production practices so that costs will be maintained at a low level and the greatest amount of oil recovered ultimately. Past experience in Woodbine sand fields clearly indicates that these conditions cannot obtain unless there is some kind of co-operation between operators.

From all the data at hand it now seems that west edge wells will be making water soon. The majority of the water wells in the field are now located on the west side of the field and because of their structural position it is only logical to assume that others located there will soon produce water along with the oil.

Handling this type of mixed fluid creates a heavy duty upon the pumping equipment. If there is slippage in the working barrel cut oil is formed and this adds to the production costs for emulsions have to be treated to secure pipe line oil. If large volumes of water are pumped the disposal of this extra fluid is costly and presents other problems for the operator.

If the pump is operating at low efficiency more time is required to pump the allowable amount of oil than would be necessary with the use of more efficient equipment. While such additional time does not make itself apparent upon the labor account it does have a direct bearing upon the power costs. The more hours the pump runs the higher the power costs.

The shorter time required to secure the fluid also tends to increase the velocity of oil or oil and water movement through the formation and this in turn has a better flushing action.

Metal-to-Metal Principle

While this article is not intended in any way to discredit the performance of the cup type pumps it is believed that the operators in East Texas should give due consideration to the pumps that employ the metal-to-metal principle between plunger and barrel. In general this type of pump has shown high efficiency in operation and has increased production rate and lowered production costs.

If it is granted that in the majority of East Texas wells it will be best to remove the fluid from the hole as it accumulates it should follow that high pump efficiency is desirable. Each stroke of the pump should deliver the maximum amount of fluid to the surface. The principle of operation of the steel plunger in a cast-iron working barrel seems to accomplish this.

Many tests conducted in other fields have demonstrated that the over-all efficiency of metal-to-metal pumps is high and rod troubles materially reduced. This is accounted for by the lowering of frictional resistance on the down stroke because of lubrication between plunger and the walls of the barrel at all times.

Some plungers are provided with grooves spaced at intervals. Some of the fluid being handled fills these grooves and is spread over the inner walls of the working barrel liner and thoroughly lubricates that surface. It has been demonstrated that in a 3,500-foot well using 2¼-inch pump there is a reduction of about 1,000 pounds in friction when the metal-to-metal principle pump is used.

The weight of the rods and the fluid column above the plunger provide the means for forcing the plunger back into the barrel after it has been lifted. If there is much friction between walls of the working barrel liner and the plunger the rods tend to push the plunger down. In so doing they kink or get out of line and the plunger may not travel to the bottom of the barrel.

This drag has a double effect. It is hard upon the rods for the slack is taken up on the upstroke of the beam and this sets up bending stresses in the sucker rods, and the plunger does not complete its full travel and therefore does not secure a full load of fluid above the traveling valve.

Manufacturers Make Tests

Manufacturers making both cup and metal-to-metal principle pumps have made tests in many fields and have demonstrated these facts and companies are now accepting them and using the metal-to-metal type pumps more extensively. This increased volume in the demand for the all-metal type pumps has permitted the manufacturers to reduce their production costs because they can make larger quantities at a time of each size of pump. Volume production reduces the cost of individual parts and this reduction in cost has been passed on to the customer.

Metallurgists have developed steel and cast iron with varying degrees of hardness so that plunger and liners can now be obtained in such combinations of relative hardness as to suit any pumping condition. If there is excessive sand produced with the oil the selection of the proper combination of plunger and cast iron liner will reduce wear to a minimum.

If it is found that an ever increasing amount of fluid must be handled in East Texas it is probable that power units and pumping equipment will be overloaded if the highest type of pump is not used in the well. Under such a changing condition it is possible to change from one type of pump to another with a reduction in power requirements and in this way prevent the need of investing in new and heavier pumping equipment.

It now seems apparent that there will be three stages of pumping in East Texas Field. The first will be a light duty period when the wells will only need agitation to permit them to flow their daily allowable. This duty will not call

(Continued on Page 30)

Do You Remember?

From The Oil and Gas Journal Files

25 Years Ago

July 25, 1908

The Texas Co. will take out a charter in Oklahoma under the name of the Oklahoma Co. The capital stock is put at $12,000,000. J. S. Cullinan, Amos L. Beaty, J. L. Dowling, T. P. Lee and Arnold Schlaet will be the incorporators.

The Glenn Pool in Oklahoma up to July 1 produced 37,397,837 bbls. since March, 1907.

20 Years Ago

July 31, 1913

Daniel E. Byles, secretary and treasurer of the Independent Refining Co. in Titusville, Pa., dies of injuries received when his automobile collided with a trolley car.

Many Houston oil men who tried to purchase leases in the recently opened pool at Somerset, Texas, have returned to Houston, scared away by the exorbitant prices asked by the landowners.

The largest producing field in the Gulf Coast region is Vinton, Louisiana, good for 4,975 bbls. per day.

10 Years Ago

July 26, 1923

For the first time in months, the average daily production of crude oil in California fell off in the week ending July 21. It dropped to 860,500 bbls. per day, a decline of 15,000 bbls.

Sidney W. Keoughan has been made chairman of the board of directors of the Mutual Oil Co.

Poland, which was third in production in 1900 among the countries of the world, has dropped to ninth place.

There were 12,626 wells completed in the United States in the first half of the year. Oil wells represented 66 per cent of the completions. There were 3,409 wells completed in Oklahoma. The Pennsylvania Grade oil fields ranked second in activity with 2,328 new wells.

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All on Same Footing

The National Recovery Administration, we are told, is interested primarily in increasing purchasing power by establishing a minimum wage and a maximum hours schedule.

Industry and business are concerned about the means to put these into effect. With conditions as they have been, millions unemployed, dividends suspended, taxation increased, prices without profit, volume of business reduced to one-half or one-fourth the peak, there was no leverage to lift either wages or employment.

Business itself has first to be given a lift out of the rut and placed in position where it can get a new start under more favorable conditions.

The oil industry, for example, must first of all find means of limiting crude oil production to demand. There can be no hope of improvement without that essential step. No code of fair competition can be effective, no increase of purchasing power, so long as overproduction floods the market with "hot oil" or "bootleg" products.

President Roosevelt recognized that fact when he issued his order banning interstate or foreign transportation of "hot oil" and the immediate enforcement of that order has shown what can be done.

As the situation stands, however, the active co-operation of every oil producing state is essential. There should be a definite allocation of production to each state so as to bring the total within the limits of demand. No loophole should be left for any state to evade its equitable allotment.

Indeed, if the recovery act is to be successful its application must be scrupulously equitable all around, not only between states in production but between all the units in the industry.

The man with a 50-barrel skimming plant must be subject to exactly the same regulation as the company with a 150,000 barrel complete refinery. In distribution, also, the man with a pump in his front yard, living on the rear of his lot, who now operates from 6 a. m. to midnight must obey the same regulations as the company with thousands of outlets, otherwise there can be no comparison in overhead costs and no equality in fair competition.

Every competitor in the business must stand on exactly the same footing under the law. There must be no cutting corners, no clouding of the facts by pleas for exemptions. A code of fair competition must be equitable or it cannot be fair. The larger unit should have no advantage over the smaller and just as certainly the smaller competitor should have no advantage over the larger.

The recovery law is going to be difficult to enforce in any event and the one hope is to make the enforcement inflexible. Assurance that it will be absolutely equitable will invite co-operation where discrimination, however well intended, will provoke resentment and evasion.

From the standpoint of strict justice and for the welfare of the industry at large no one in the petroleum business should be allowed to operate below the costs laid down by the law. If this is not understood and enforced the price cutter will continue to rob the industry and increased purchasing power will become impossible in competition with below cost prices.

No industry can function successfully under the recovery act if half is regulated and half unregulated. The unregulated half will soon pull the whole business down to its level.

The hearings at Washington are putting the case clearly before the National Recovery Administration and before the people of the country. It is not difficult for anyone to appraise the relative value of the statements presented to General Johnson.

The statements of Mr. Byles and Mr. Franklin were an admirable exposition of the situation as known by the vast bulk of the industry. They carried conviction of their soundness, fairness and necessity.

They evidently impressed General Johnson who bluntly expressed his impatience with merely controversial harangues. The country in its present mood will be equally impatient and resentful of mere factionalism when the imperative need of the hour is for united action for the common welfare.

Where honest differences of opinion exist reasoning can find a compromise that will be preferable to mutually disastrous deadlock. During the war oil men of rabidly divergent views upon normal petroleum policies found it possible to work shoulder to shoulder for their common country. What President Roosevelt calls "the economic hell of the past four years" has been more destructive and dangerous than anything we experienced during the war.

There is today the same compulsion of dire necessity for every American to do his part in overcoming the difficulties that have beset us. We cannot get anywhere as individuals going our own ways. We have tried that for four years and in the oil industry for much longer.

Individual insistence upon producing more crude and more products than the market could absorb have brought the industry to its present pass. The proposed code offers the simple, common sense remedy of limiting production to demand and allocating it equitably throughout the industry.

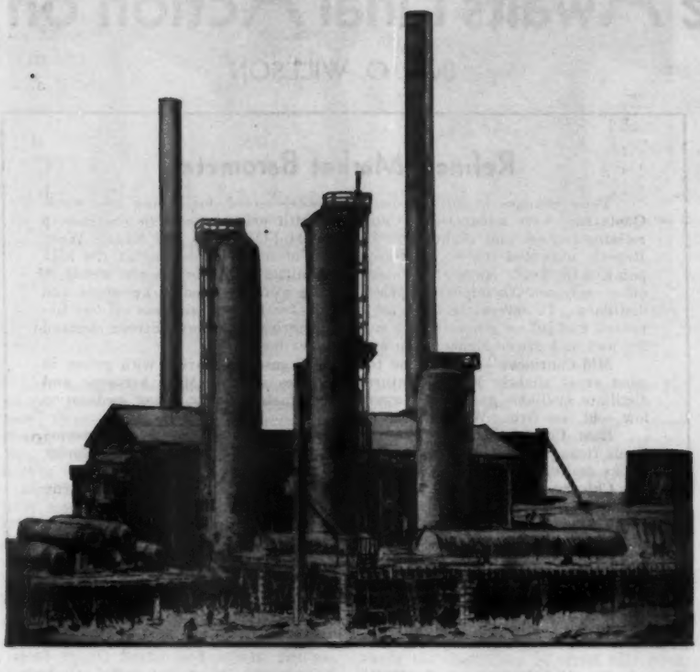
There is no alternative except the "every man for himself" policy which has resulted as we see, not only in the oil business but in all businesses where the unscrupulous competitor has sapped the foundations and brought the whole structure tumbling about us.

But the approval of a generally satisfactory code by the President and its acceptance by the bulk of the industry will not mean the end of effort. Experience with the code of marketing ethics which was signed by more than 17,000 shows that mere signatures are not effective.

Those who can see nothing but personal gain and have only contempt for the rights of others will feel as little bound by the new code as by the old unless they are made to feel the penalty.

Those who respect the code will not have done their full duty if they fail to exert pressure against those they know to be cheating. Evasion, if tolerated, will simply offset all that those who keep their word can do.

The success or failure of the whole effort to get the country out of the depression will depend upon the degree of wholehearted active co-operation we put behind it and that goes for the oil business above all.



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Gasoline Prices in Group 3 Market Move Lower As Trade Awaits Final Action on the Code

By C. O. WILLSON

Awaiting developments which are expected within a week to give the entire industry a final yardstick with which to determine future operations, spot markets in Oklahoma and the Mid-Continent area generally were marking time the first of the week. Spot trading continued slow although contract movement was satisfactory.

With some distress material still available, spot prices on all grades of refinery gasolines were one-eighth to one-fourth cent lower than a week ago. The excess gasoline was coming largely from East Texas refineries, some of which had reached points in the Middle West and Southeast with its final destination still undetermined. Oklahoma and Kansas sellers with material to move were forced to meet these East Texas prices. Kerosene and all grades of distillate also were easier and prices on some grades were one-eighth cent lower than last week. Heavy fuels and gas oils were steady with several inquiries for shipment in August and fall months. Wax was scarce in Oklahoma in the face of many export and domestic inquiries and manufacturers of cylinder stocks and neutral oils generally were maintaining the recent price advances.

Despite the price recessions the trade as a whole is optimistic regarding probable price trends for the immediate future. It is felt that while East Texas continued to exert a bearish influence on the market over the past week, that conditions in that section are improving from the standpoint of both crude oil and refinery markets. It is known that the new Federal regulations aimed to stop the production of "hot" crude oil, are accomplishing their purpose and this in turn is tending to limit the quantity of gasoline and other products available at prices which do not reflect the cost conditions of a majority of the refining industry in the Mid-Continent and Middle West. It is expected that as soon as the new license arrangement of the Government is made effective that all bootleg operations will stop in the Mid-Continent for the first time in two or three years and all operators will be placed on the same basis in regard to crude oil costs. This will mean not only the elimination of refining operations in East Texas but will tend to minimize the dominant market position, a group of operators have maintained in the spot market over a large consuming territory. While this development is of primary importance to the gasoline market it also should be quickly reflected in the kerosene and distillate market. East Texas refineries have been a large source of supply on the spot market for both kerosene and distillate over the past several months. In the older refining areas of the Mid-Continent practically all the supplies of these products have been absorbed through long-time contracts and regular customers of refiners so that the quantities offered on the spot market are limited. This would mean a strong price situation at this time were it not for the fact that considerable material has been made available from East Texas plants. When properly refined East Texas crude oil furnishes an excellent grade of kerosene and several plants have the necessary equipment to do this. In all cases the plants can refine a prime white distillate of low cold test which is satisfactory for high gravity furnace oil or can be blended with lower gravity material secured from other areas. In a few cases the East Texas refiners also are factors in the fuel oil and gas oil market. These operators have cracking equipment and can reduce the cold test of the stock secured in a skimming operation. The bulk of these heavier fuels and gas oils, however, are sold locally and are not an important factor in northern markets.

Code to Help

Aside from the East Texas situation it is felt that the code of practices adopted by a majority of the industry will materially aid price conditions. It is anticipated that this code with minor changes will receive the approval of the Government before the close of the month or early in August. Those who have made a close study of this code point to two things which they believe assure generally higher prices in the petroleum industry at least for a time. It is felt that the Government will secure the co-operation of the states in curtailing crude oil production to current requirements with probably some withdrawals from storage. If this objective is accomplished coupled with enforcement programs which will eliminate the bugaboo of bootlegging the industry it is contended for the first time in five years, will have the background necessary to support higher posted schedules for crude oil in all domestic fields. This decreased crude oil production would be reflected immediately in reduced crude oil runs to stills at re-

Refined Market Barometer

Price changes in refinery gasolines were mixed during the past week. Quotations were advanced in California with prices steady in the eastern refining centers and slightly lower in the Mid-Continent and Middle West. Reports indicated the actual consumption of motor fuels was at the high point of the year. Natural gasolines were higher in California and steady in other sections. No important price changes were reported in kerosenes and distillates. In several sections the demand for fuel oil and gas oil has improved and prices generally are steady. Lubricants steady. Strong demand for wax and prices higher when any changes made.

Mid-Continent—Easier tone to refinery gasoline market with prices in most areas slightly lower. Natural gasolines steady. More kerosene and distillate available and prices lower. Heavy fuels and gas oils of medium or low cold test firm. Wax strong.

East Coast—Gasoline prices unchanged. Fair movement of kerosene. Fuels firm. Steady improvement in demand for wax. Gallonage in cylinder stocks maintained.

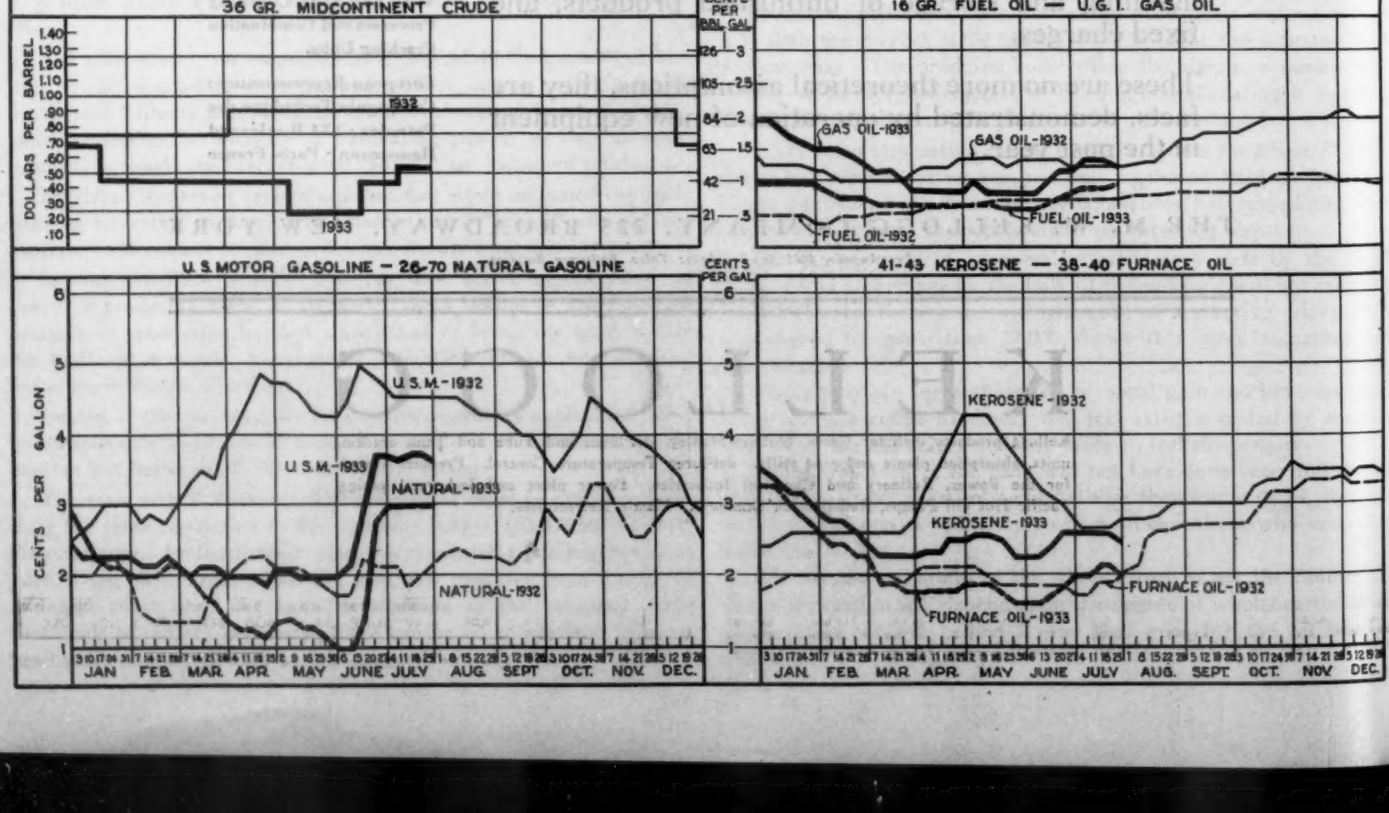
Chicago—Slightly lower quotations on most grades of gasoline, kerosene and distillate. Steady industrial demand for fuel oil and gas oil.

Pennsylvania—Cylinder stock and neutral oil prices steady. Gasoline and kerosene unchanged.

California—Refinery and natural gasoline prices higher for domestic movement. Other products firm.

Gulf Coast—Gasoline market easier. Kerosene steady. All grades of fuel oil higher.

Representative Mid-Continent Quotations on Crude Oil and Refined Products Basis Oklahoma (Group 3)



fineries, a development which is desirable at this time and which will be of special importance this fall when the seasonal decline for motor fuels starts.

The second development to be brought about by the code of practices which it is contended point to higher prices for refinery products, is the higher costs due to maximum hours of employment and minimum wage scales. Those who have attempted to make a study of the probable applications of these two provisions are authority for the statement that wage costs in refining and marketing will be greatly increased and these costs with the approval of the Government must necessarily be reflected in the tank car prices for refinery products, particularly gasoline.

While not all the trade take the optimistic view just outlined, the general attitude is to await final action of the Government in regard to the code of practices before doing any buying or selling in excess of immediate requirements. In this connection, it is said, in circles usually well informed, that once a final program is adopted by the industry under government supervision that a buying agency will be set up in the Mid-Continent representing important refinery operators which will be in a position to purchase excess material from smaller refiners and prevent the dumping of products from time to time, a practice which has often prevented price recovery in the past.

Gasoline and Naphtha

The refinery gasoline market failed to show any improvement on Monday and Tuesday after a slow period last week. In Oklahoma the low octane gasoline was available from several sources to the trade at a low of 3⅝ cents. East Texas material was offered in the Oklahoma market as low as 3¼ cents basis Group 3 on Tuesday. In some cases this East Texas material comes close to 60 octane in antiknock rating. In general the East Texas straightrun gasoline is higher in antiknock rating than straightrun material from other Mid-Continent crudes. The straightrun gasoline from Oklahoma City crude oil is exceptionally low in octane rating and sellers have difficulty in securing East Texas prices in northern markets where antiknock rating is a factor.

The higher octane gasolines have become available in larger quantities and quotations on these grades are one-fourth cent lower. The widening use of the Q brand license which permits licensees to ethylize their regular grade gasoline is tending to make more of the high octane gasoline available. The Standard of Indiana is the latest major organization to adopt the Q brand and others are expected to follow. Some of these companies now have cracking and reforming equipment which they will not need to secure a high octane rating in their regular grade gasoline and for that reason they will have excess material to offer on the spot market. This will tend to narrow the price spread again between the regular and third grade gasolines. The demand for naphthas unless high octane material is guaranteed is not heavy but sellers are maintaining their prices in Oklahoma.

Kerosene and Distillate

Specification water white kerosene of 41-43 gravity is now available in Oklahoma at a low of 2½ cents with prices ranging up to 3 cents. The 42-44 grade is one-eighth cent higher. The demand is fair for this product but supplies have increased and buyers have been able to shade the quotations in effect last week. High endpoint kerosene is available from one-eighth to one-fourth cent lower than above quotations.

The several grades of distillates are available one-eighth cent lower than last week. The prime white and straw color high gravity grades are available from several sources with East Texas refiners determining the market for the Mid-Continent except on short hauls. Prices on the straw grades ranged up from 1¾ cents and prime white material was available at a low of 2⅛ cents. There continues to be greater demand than supply for 32-36 zero, low gas oil at prices which range up from 2 cents.

Fuels and Gas Oils

The supply of all fuels and gas oils is limited in Oklahoma. There have been numerous inquiries for fuels ranging up in gravity from 24 to 30. The buyers want clean stock of low cold test which can be used as furnace oil material. Quotations on these products over the past week ranged from 60 to 80 cents per barrel depending on gravity. Sales of 28-70 at 70 cents were reported. Industrial gas oils are quoted at a low of 1¼ cents.

Natural Gasoline

A low of 3 cents is being maintained for 26-70 natural gasoline. Buying is in sufficient quantity in Oklahoma and Texas to prevent dumping at prices under this quotation. Lower vapor pressure material ranged from 3½ cents for 18 pounds to 4¼ cents for 11 pounds.

Lubricants and Wax

Most manufacturers report a steady movement in cylinder stocks and neutral oils. The recent advances in these products are being maintained and the sellers are hopeful that this situation can be continued over the balance of the year. Most manufacturers are out of the wax market with quotations on the 124-126 grade ranging from 2¾ to 3 cents per pound.

Stop Shipments of Hot Crude and Gasoline in East Texas

Left to right: Norman L. Meyers, associate attorney, Federal Power Commission; Capt. E. N. Stanley, supervisor in charge of Railroad Commission forces in East Texas, and J. Howard Marshall, assistant to dean, Yale Law School.

Mr. Marshall and Mr. Meyers, who have made an intensive study of the petroleum industry and its problems during the past few years, were made assistant solicitors of the Department of the Interior and represent the Federal Government in East Texas. They are given credit for the quick and effective enforcement of the orders by President Roosevelt and Secretary of the Interior Harold L. Ickes to stop all interstate shipments of crude oil produced in excess of allowables and of refined products manufactured from so-called hot oil.

REFINERY WINS TROPHY

NEW YORK, July 24.—The President's Trophy, coveted annual prize sought by eight units of the Tide Water Oil Co. in the intercompany safety contest, has been awarded to the Bayonne refinery for the half year ended June 30.

The final results for the period ended June 30 showed the Bayonne refinery in the lead, with the other units placing in the following order: Tide Water Pipe Co.; Tide Water Oil Co. of Oklahoma, producing division; Tide Water Oil Co. of Oklahoma, sales division; Tide Water Oil Sales Corp., marine department; Tide Water Oil Co. of Oklahoma, refining division, and East Jersey Railroad & Transportation Co.

The trophy is awarded at the completion of each six-month period to the unit having the lowest number of accidents to the number of man-hours worked and the greatest improvement in accident reduction over the previous six-month period. During the first half of 1933 three accidents, resulting in the loss of 704 hours in a total of 1,364,429 man-hours worked, were sustained in the Bayonne refinery, a rating of 64 per cent of improvement in accidents.

American Petroleum Institute Weekly Refinery Statistics

Figures below reported for week by American Petroleum Institute. (1) Per cent refinery capacity represented. (2) Daily average crude runs to stills. (3) Total motor fuel stocks. (4) Gas oil and fuel oil stocks. All figures in 42-gallon barrels.

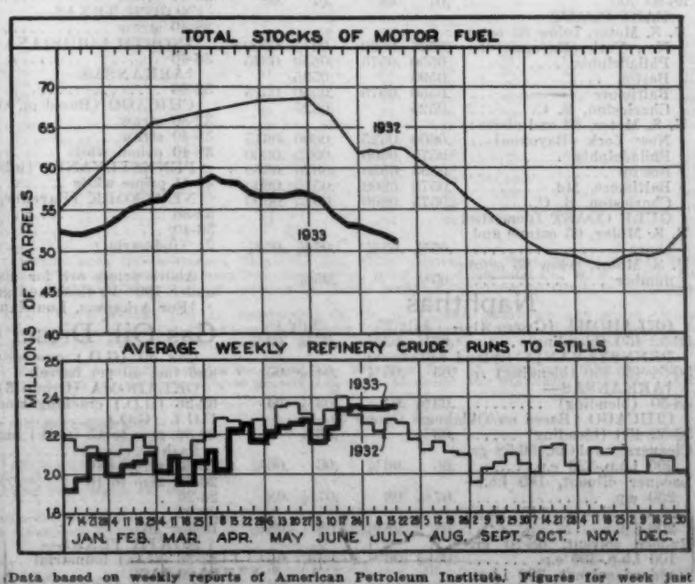
Week Ending July 22, 1933, Compared to Week Ago

	Week ending July 22, 1933				Week ending July 15, 1933			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	100.0	477,000	14,208,000	7,788,000	100.0	487,000	14,652,000	7,487,000
Appalachian	92.6	104,000	1,967,000	880,000	92.6	92,000	1,916,000	926,000
Ind., Ill., Ky.	97.3	348,000	7,300,000	4,523,000	97.3	359,000	7,377,000	4,404,000
Okla., Kans., Mo.	82.1	281,000	4,510,000	3,658,000	82.1	256,000	4,550,000	3,668,000
Inland Texas	58.7	101,000	1,330,000	1,899,000	58.7	104,000	1,283,000	2,146,000
Texas Gulf	98.0	427,000	6,090,000	7,042,000	98.0	417,000	6,150,000	6,742,000
Louisiana Gulf	100.0	113,000	1,281,000	1,847,000	100.0	114,000	1,168,000	1,902,000
N. La. and Ark.	92.6	43,000	261,000	511,000	92.6	43,000	252,000	498,000
Rocky Mtn.	78.8	43,000	1,115,000	776,000	78.8	47,000	1,082,000	760,000
California	96.9	450,000	13,824,000	99,563,000	96.9	457,000	13,368,000	99,343,000
Total U. S.	92.2	2,387,000	51,936,000	128,487,000	92.2	2,376,000	51,798,000	127,776,000

Total motor fuel stocks, Bureau of Mines basis, 53,940,000 bbls.

Week Ending July 22, 1933, Compared to Year Ago

	Week ending July 22, 1933				Week ending July 23, 1932			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	100.0	477,000	14,208,000	7,788,000	100.0	457,700	19,782,000	7,677,000
Appalachian	92.6	104,000	1,967,000	880,000	91.8	93,900	2,350,000	1,121,000
Ind., Ill., Ky.	97.3	348,000	7,300,000	4,523,000	93.9	296,000	8,190,000	4,393,000
Okla., Kans., Mo.	82.1	281,000	4,510,000	3,658,000	89.6	231,700	6,360,000	3,467,000
Inland Texas	58.7	101,000	1,330,000	1,899,000	76.5	103,000	1,859,000	2,455,000
Texas Gulf	98.0	427,000	6,090,000	7,042,000	99.8	403,400	5,260,000	8,303,000
Louisiana Gulf	100.0	113,000	1,281,000	1,847,000	100.0	98,600	1,964,000	4,711,000
N. La. and Ark.	92.6	43,000	261,000	511,000	97.0	44,600	241,000	884,000
Rocky Mtn.	78.8	43,000	1,115,000	776,000	89.4	42,700	1,863,000	639,000
California	96.9	450,000	13,824,000	99,563,000	96.7	491,800	16,785,000	98,761,000
Total U. S.	92.2	2,387,000	51,936,000	128,487,000	95.1	2,263,400	63,455,000	133,210,000



Data based on weekly reports of American Petroleum Institute. Figures for week just ended not shown in graph but are included in accompanying table.

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement except as otherwise noted

EXCLUSIVE OF TAXES

The following quotations are exclusive of the Federal excise taxes of 1½ cents a gallon on gasoline and 4 cents on lubricating oils, which became effective June 17, 1933.

Refinery Gasolines

	July 25		July 18	
OKLAHOMA (Group 3)—				
*U. S. Motor grades:				
Regular	.04⅝	.04⅝	.04⅝	.04¾
Premium	.04⅝	.05	.04⅞	.05⅛
Third grade	.03⅝	.04	.03¾	.04
60-62 400 grades:				
Regular	.04½	.04¾	.04⅝	.04⅞
Premium	.04⅝	.05	.04⅞	.05⅛
Third grade	.03¾	.04	.03⅞	.04⅛
64-66 390	.04½		.04⅝	
64-66 375	.04½	.05	.04¾	.05
68-70 350	.04⅝	.05	.04¾	.05
NORTH TEXAS—				
U. S. Motor grades:				
Regular	.04¼	.04½	.04½	
Premium	.04⅝	.05	.04⅝	.05
Third grade	.03½	.03¾	.03¾	.03⅞
60-62 400	.03⅞	.04	.04	.04¼
64-66 390	.03⅞	.04	.04	.04¼
64-66 375	.04¼	.04½	.04⅜	.04½
64-66 360	.04⅜	.04½	.04½	
†NORTH LOUISIANA—				
U. S. Motor grades:				
Regular	.04½	.04¾	.04¾	.05
Premium	.04⅝	.05	.05	.05½
Third grade	.04¼	.04½	.04½	.04⅝
60-62 400	.04½	.04¾	.04½	.04¾
†ARKANSAS—				
U. S. Motor grades:				
Regular	.04½	.04¾	.04¾	.05
Premium	.04⅝	.05	.05	
Third grade	.04¼	.04½	.04½	
CHICAGO (Based on Oklahoma Group 3)—				
U. S. Motor grades:				
Regular	.04¼	.04½	.04½	.04⅜
Premium	.04½	.04⅞	.04⅝	.04⅞
Third grade	.03½	.04	.03¾	.04
60-62 400	.03¾	.04	.04	.04½
64-66 375	.04	.04½	.04¼	.04⅝
68-70 360	.04¼	.04½	.04⅜	.04½
Aviation fighting grade	.04¾	.05	.04½	.04¾

*Octane Ratings—The following octane ratings apply to the three grades of U. S. Motor gasoline: Regular 60-64 octane number; premium, 65 and above octane number; third grade, 59 and below octane number. Octane ratings determined by C.F.R. Motor Method.

†For Arkansas, Louisiana and Mississippi delivery.

PENNSYLVANIA (inland refineries)—				
U. S. Motor	.05⅝	.05½	.05⅝	
60-62 400	.05½	.05⅝	.05½	.05⅞
64-66 375	.05⅞	.06	.05⅞	.06
68-70 350	.06¼		.06¼	
CALIFORNIA (domestic movement)—				
54-58 U. S. Motor	.06¼	.07½	.06½	.07½
58-60 400	.07	.08	.07	.08
EAST COAST—				
U. S. Motor, below 65 octane:				
New York (Bayonne)	.0575	.0590	.0575	.0590
Philadelphia	.0550	.0575	.0550	.0575
Boston	.0595		.0595	
Baltimore	.0550	.0575	.0550	.0575
Charleston, S. C.	.0525		.0525	
U. S. Motor, 65 and above:				
New York (Bayonne)	.0600	.0625	.0600	.0615
Philadelphia	.0575	.0600	.0575	.0600
Boston	.0595	.0630	.0620	.0630
Baltimore, Md.	.0575	.0600	.0575	.0600
Charleston, S. C.	.0575	.0600	.0575	.0600
GULF COAST (domestic)—				
U. S. Motor, 65 octane and above	.05⅝	.05¾	.05⅝	.05¾
U. S. Motor, below 65 octane number	.05¼		.05¼	

Naphthas

OKLAHOMA (Group 3)—	July 25		July 18	
50-52 450 (blending)	.03½	.03¾	.03⅝	.03¾
PENNSYLVANIA (inland refineries)—				
50-54 430-450 (blending)	.05	.05¼	.04⅞	.05
†ARKANSAS—				
48-50 (blending)	.03⅞	.04	.03⅞	.04
CHICAGO (Based on Oklahoma Group 3)—				
50-52 450 (blending)	.03⅞		.03⅝	
Cleaners' naphtha, 56-58 gr., 200 i.b.p.-320 e.p.	.06	.06¼	.06	.06¼
Lacquer diluent, 180 i.b.p.-250 e.p.	.07½	.08	.07½	.08
Lacquer diluent, 140 i.b.p.-200 e.p.	.08	.08½	.08	.08½
Rubber solvent, 68-70 gr., 100 i.b.p.-300 e.p.	.05¾	.06	.05¾	.06
Stoddard solvent, 300 i.b.p.-410 e.p., over 83° flash	.05½	.05¾	.05½	.05¾
Pet. thinner, 290-300 i.b.p.-415 e.p., over 83° flash	.05	.05¼	.05	.05¼
V.M.&P. naphtha, 56-58 gr., 190-200 i.b.p.-330 e.p.	.05¾	.06	.05¾	.06
Petroleum spirits	.04¾	.05	.04¾	.05

Natural Gasolines

	July 25		July 18	
OKLAHOMA (Group 3)—				
Grade 18-55	.03½		.03½	
Grade 26-70	.03		.03	
Grade 30-70	.02⅞		.02⅞	
*Low pressure grades:				
15 lb. v.p. (max.)	.03½	.03¾	.03½	.03¾
11 lb. v.p. (max.)	.04	.04¼	.04	.04¼
NORTH TEXAS—				
Grade 18-55	.03½		.03½	
Grade 26-70	.03		.03	
Grade 30-70	.02⅞		.02⅞	
*Low pressure grades:				
15 lb. v.p. (max.)	.03½	.03¾	.03½	.03¾
11 lb. v.p. (max.)	.04	.04¼	.04	
NORTH LOUISIANA—				
Grade 26-70	.03¼	.03½	.03¼	.03½
CALIFORNIA—				
75-78 375	.05¼	.06½	.04¾	.06

Kerosenes

(All kerosenes water white)

	July 25		July 18	
OKLAHOMA (Group 3)—				
41-43	.02½	.02¾	.02⅝	.02¾
42-44	.02⅝	.02⅞	.02¾	.03
NORTH TEXAS—				
40-41	.02¾	.02½	.02½	
41-43	.02½	.02⅝	.02½	.02¾
†NORTH LOUISIANA—				
41-43	.02⅞	.03	.03	
42-44	.03	.03¼	.03¼	
†ARKANSAS—				
41-43	.02⅞	.03	.03	
PENNSYLVANIA (inland refineries)—				
45	.04¼	.04⅜	.04⅛	
46	.04¼	.04½	.04¼	
47	.04½	.04¾	.04⅜	
CHICAGO (Based on Oklahoma Group 3)—				
41-43	.02½	.02¾	.02⅝	.02¾
42-44	.02⅝	.02¾	.02¾	.02⅞
*CALIFORNIA—				
38-40 high burning test	.04	.04½	.03⅜	.04¼
NEW YORK (Bayonne, N. J.)—				
41-43	.05	.05¼	.05	.05¼
GULF COAST (domestic)—				
41-43 water white	.04	.04¼	.04	.04¼

*For Pacific Coast consumption.

†For Arkansas, Louisiana and Mississippi delivery.

Furnace Oils and Tractor Fuels

	July 25		July 18	
OKLAHOMA (Group 3)—				
32-36 straw	.02	.02⅛	.02⅛	.02¼
36-38 straw	.01¾	.02	.01⅞	.02⅛
38-40 straw	.02	.02⅛	.02⅛	
39-41 prime	.02⅛	.02¼	.02⅛	.02¼
NORTH TEXAS—				
38-40 straw	.02	.02⅛	.02	.02⅛
†NORTH LOUISIANA—				
36-40	.02½	.02¾	.02½	.02¾
†ARKANSAS—				
32-36	.02½		.02½	.02⅝
CHICAGO (Based on Oklahoma Group 3)—				
32-36 straw	.02	.02½	.02	.02½
38-40 straw	.02½	.02¾	.02½	.02¾
38-40 prime white	.02½	.02¾	.02¾	.02⅞
PENNSYLVANIA (inland refineries)—				
40-41 prime white	.03⅝	.03¾	.03⅝	
NEW YORK (Bayonne, N. J.)—				
32-36	.04		.04	
36-40	.05		.05	
21 (industrial)	.03½		.03½	

Above prices are for distillate oils of zero cold test under 190° F. flash and good odor.

†For Arkansas, Louisiana and Mississippi delivery.

Gas Oil, Diesel Oil and Fuel Oil

Gas oil (G.O.) quoted per gallon basis; Diesel oil and fuel oil per barrel.

	July 25		July 18	
OKLAHOMA (Group 3)—				
32-36 (G.O.) cracking stock	.01⅛	.01⅜	.01¼	.01⅜
U.G.I. (G.O.)	.01¼	.01⅜	.01½	.01⅝
32-36, zero to 15 (G.O.) high flash	.01⅝	.01¾	.01⅝	.01¾
28-30, zero to 10	.70	.75	.70	.75
26-30, zero to 10	.65	.70	.65	.70
24-26	.50	.55	.50	.55
20-22	.45	.50	.45	.50
Below 16	.40	.45	.40	.45
NORTH TEXAS—				
32-36 (G.O.) industrial	.01¼		.01¼	
22-26	.45	.50	.45	.50
Below 20	.40	.45	.40	.45
†NORTH LOUISIANA—				
32-36 (G.O.) zero	.02½		.02½	
14-16	.35	.40	.35	
†ARKANSAS—				
30-32 (G.O.) zero	.02½		.02½	
14-16	.35		.35	
CHICAGO (Based on Oklahoma Group 3)—				
32-36 (G.O.) industrial	.01¼	.01⅜	.01⅜	.01½
28-30 (zero)	.70	.80	.70	.80
26-28 (zero)	.65	.75	.65	.75
22-26 (zero)	.60	.65	.60	.65
18-22 (zero)	.55	.60	.55	.60
Below 18	.40	.45	.40	.45

Note: Fuel oils of more than 40 cold test generally 5 to 15 cents per barrel less in all areas than shown in above tables.

†For Arkansas, Louisiana and Mississippi delivery.

PENNSYLVANIA (inland refineries)—				
36-40	.03⅜		.03⅜	
CALIFORNIA—				
30-34 (G.O.) per bbl.	.80	.90	.80	.90
27 plus Diesel	.80	.90	.80	.90
15-19 bunker (at tidewater)	.50	.60	.50	.60
15-19 (cargo lots)	.45	.55	.45	.55
15-19 (tank cars)	.42½	.50	.42½	.50
GULF COAST—				
28-30 (G.O.)	.03		.03	
28-30 Diesel	1.50		1.50	
Bunker C (bulk cargoes)	.60		.50	.55
Bunker C (bunkers)	.70		.60	
NEW YORK (Bayonne, N. J.)—				
28 plus (G.O.)	.04		.04	
*28-30 Diesel	1.75		1.75	
26-30 Diesel (tank cars)	.04		04	
‡Bunker C	.80	.85	.80	.85

*Lighterage 6½ cents per barrel.

†Lighterage 5 cents per barrel.

‡Contract price at New York Harbor to ocean-going steamships only.

Petroleum Coke*

Prices per ton f.o.b. refineries in Chicago area.

Breeze (screenings)	4.75
Still runs	5.75
Lump and egg	6.75
	4.50
	5.50
	6.50

*Refineries will absorb freight to 80 cents a ton.

Neutral Oils

(Viscosity at 100° F. and color)

	July 25		July 18	
OKLAHOMA (Group 3)—				
Zero to 10 Cold Test:				
150-3	.07¼	.07½	.07¼	.07½
180-3	.08½	.08¾	.08½	.08¾
180-4	.08¼	.08½	.08¼	.08½
200-3	.09	.09¼	.09	.09¼
200-4	.08¾	.09	.08¾	.09
240-3	.11	.11¼	.11	.11¼
240-4	.10¾	.11	.10¾	.11
280-3	.12	.12¼	.12	.12¼
280-4	.11½	.11¾	.11½	.11¾
300-3½	.12¾	.13	.12¾	.13
350-3½	.13¾	.14	.13¾	.14
400-4	.14¾	.15	.14¾	.15
500-4½	.15¾	.16	.15¾	.16
100-2 paraffin oil	.05¼	.05½	.05¼	.05½
15-30 Cold Test:				
200-3	.08¼	.08½	.08¼	.08½
200-4	.08	.08¼	.08	.08¼
240-3	.10¼	.10½	.10¼	.10½
240-4	.10	.10¼	.10	.10¼
280-3	.11¼	.11½	.11¼	.11½
280-4	.11	.11¼	.11	.11¼
PENNSYLVANIA—				
150 vis., No. 3, 400-405:				
Zero pour test	.17⅝	.18¼	.17½	.18
10 pour test	.17¼	.17¾	.17	.17½
15 pour test	.15¾	.16	.15½	.15⅝
25 pour test	.15	.15¼	.14⅝	.15
180 vis., No. 3, 25 pour test	.16½	.16¾	.16¼	.16½
200 vis., No. 3:				
Zero pour test	.20¾	.21	.20½	.20¾
10 pour test	.19⅝	.20	.19½	.19⅝
15 pour test	.18¾	.19	.18½	.18⅝
25 pour test	.18	.18¼	.17⅝	.18
GULF COAST—				
Pale Oils:				
100-2-2½	.05½		.05½	
200-3	.06¼	.06½	.06¼	.06½
300-3	.07⅝	.08	.07⅝	.08
500-3½	.09⅝	.10	.09⅝	.10
750-3½	.10⅝	.11	.10⅝	.11
1,200-3½	.12⅝	.13	.12⅝	.13
2,000-4	.14⅝	.15	.14⅝	.15
Red Oils:				
200-5-6	.05½		.05½	
300-5-6	.06¼	.06½	.06¼	.06½
500-5-6	.07¾	.08	.07¾	.08

750	.12¾	.13	.12¾	.13
1,200-5-6	.12¾	.13	.12¾	.13
2,000-6 plus	.14¾	.15	.14¾	.15
CALIFORNIA—				
Pale Oils:				
100-2½-3	.09	.09½	.09	.09½
200-2½-3	.09½	.10	.09½	.10
300-3-3½	.10½	.11	.10½	.11
350-3-4	.11	.11¼	.11	.11¼
400-3-4	.11¼	.11¾	.11½	.11¾
450-3-4	.11¾	.12	.11¾	.12
550-3-4	.12	.12½	.12	.12½
Red Oils:				
200-4-5	.09½	.10	.09½	.10
300-5-6	.10½	.11	.10½	.11
350-5-6	.11	.11½	.11	.11½
400-5-6	.11¼	.11¾	.11½	.11¾
450-5-6	.11¾	.12	.11¾	.12
500-5-6	.12	.12¼	.12	.12¼
600-5-6½	.12¼	.12½	.12¼	.12½
700-6½ plus	.12½	.12¾	.12½	.12¾
750-6½ plus	.12¾	.13	.12¾	.13
900-6½ plus	.13	.14½	.13	.14½

Bright and Steam Refined Stocks

OKLAHOMA (Group 3)—	July 25		July 18	
630 light green	.06¾	.07¾	.06¾	.07¾
600 light green S.k.	.06½	.07½	.06¼	.07½
600 dark green S.R.	.04¾	.05¾	.04¾	.05¾
Bright Stocks:				
190-200 D	.22½	.23½	.22½	.23½
150-160 D, 0-10	.20¾		.20¾	
150-160 D, 10-25	.20¼		.20¼	
150-160 D, 25-40	.19¾		.19¾	
150-160 E	.18¾		.18¾	
PENNSYLVANIA—				
600 S.R.	.14	.14¼	.13¼	.13½
650 S.R.	.16¼	.16½	.15½	.16
600 Pennsylvania flash	.17½	.17½	.16½	.16¾
650 D filtered	.22¼	.22½	.21¼	.21¾
600 E filtered	.17¾	.18	.16¾	.17¼
Pennsylvania Grade bright stock:				
No. 8 color, 145-50 vis., at 210; 540-550 flash:				
10 pour test	.27	.27½	.25½	.26
15 pour test	.25	.25½	.24	.24½
25 pour test	.24	.24½	.23	.23½

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—	July 25		July 18	
124-126 white crude scale	.02¾	.03	.02½	.02¾
PENNSYLVANIA—				
122-124	.03	.0305	.03	.03½
124-126	.03125	.0315	.03	.03⅛
NEW YORK HARBOR—				
120-122 (a.m.p. basis)	.0325		.0325	
125-127	.0355		.0355	
130-132	.0410		.0410	
133-135	.0475		.0475	
135-137	.0500		.0500	
Petrolatum in barrels in carload lots:				
Dark green	.01⅞		.01⅞	
Amber	.02		.02	
Extra amber	.02¾		.02¾	
Lily white	.05½		.05½	
Snow white	.06½		.06½	
Cream	.04½		.04½	
CHICAGO (f.o.b. switching district)*—				
122-124	.0365	.0375	.0365	.0375
125-127	.0390	.0400	.0390	.0400
127-129	.0405	.0415	.0405	.0415
130-132	.0465	.0475	.0465	.0475
132-134	.0490	.0500	.0490	.0500

*Cents per pound on carlot orders in burlap bags of 225 lbs. approx.
Add 3* F. for a.m.p.

Export Prices

GASOLINE

GULF COAST—	July 25	July 18
U. S. Motor	.04½	.04½

60-62 400	.04¾		.04¾	
61-63 390	.04¾		.04¾	
64-66 375	.04¾	.05	.04¾	.05
LOS ANGELES, CALIF.—				
U. S. Motor, 53-55 437 e.p.	.04	.04½	.04	.04½
U. S. Motor, 65 octane	.04½	.04¾	.04½	.04¾
U. S. Motor, 67 octane	.05		.05	
U. S. Motor, 69 octane	.05¼		.05¼	
58-60 400 endpoint gasoline	.04½	.05	.04½	.05
KEROSENE				
GULF COAST—				
41-43 prime white	.04	.04¼	.04	.04½
41 water white	.04¼	.04½	.04¼	.04½
LOS ANGELES, CALIF.—				
41-43 water white	.03¾	.04¼	.03¾	.04¼
LUBRICANTS				
NEW YORK (f.a.s. in bbls.)—				
600 Warren E	.23		.23	
600 S.R. unfiltered	.19¼		.19¼	
650 S.R. unfiltered	.21½		.21½	
600 flash S.R.	.22½		.22½	
630 flash S.R.	.27½		.27½	
Bright stock, No. 8 color	.29		.29	
Bright stock, No. 6½ color dil.	.28½		.28½	
NEUTRALS				
NEW YORK—Pale Engine Oil, Bulk (vis. at 100)—				
230-3¾	.10¾		.10¾	
180-3½	.10½		.10½	
100-2½	.06		.06	
Red Engine Oil, Bulk (vis. at 100):				
300-6½	.10½		.10½	
250-6	.09½		.09½	
200-6	.08¾		.08¾	
PARAFFIN WAX (Fully Refined)				
NEW YORK (prices per pound)—				
123-125 a.m.p.	.0325		.0320	
125-127 a.m.p.	.0340		.0340	
130-132 a.m.p.	.0390		.0390	
133-135 a.m.p.	.0430		.0430	
135-137 a.m.p.	.0460		.0460	

Crude Oil Prices

Oklahoma, Kansas, North and East Central Texas

East Texas (see note) .....$.50 and $.75
Stratman, Kansas (July 17, 1933)† ..... .62
Corsicana (heavy) (June 17, 1933)* ..... .30
Other fields.....(See gravity table)

Note—Effective July 6, Sinclair Prairie Oil Marketing Co. posted 75 cents; effective July 6, Empire Oil & Refining Co., 75 cents; effective July 7, Magnolia Petroleum Co., 75 cents; Sun Oil Co., 75 cents; effective July 7, Panola Pipe Line Co., 75 cents; June 17, East Texas posted by Stanolind Crude Oil Purchasing Co., 50 cents; effective June 19, Texas Co., Tide Water Oil Co., Humble Oil & Refining Co., Gulf Pipe Line Co., 50 cents.
*Magnolia Petroleum Co. †Eldorado Refining Co.

West Texas

Crane, Upton, Crockett, Howard, Glasscock, Mitchell, Ector, Winkler and Pecos Counties (see note) .....$.30
Lea County, N. Mex. (June 19, 1933) .. .30
Toborg, Pecos County (June 20, 1933)*. .25
Jones and Fisher Counties..See gravity table

Note—Effective July 7, Magnolia Petroleum Co., 45 cents; June 19, Crane, Upton, etc., posted by the Texas Co., Magnolia Petroleum Co., Gulf Pipe Line Co., Humble Oil & Refining Co. Lea County, 30 cents, effective June 19, Texas Co. and other purchasers, 30 cents.
*Shell Petroleum Corp.

Gulf Coast

Grade A and Grade B specifications discontinued by leading buyers .....
.....See gravity table
Tomball (June 19, 1933)* .....$ .65
Livingston (June 20, 1933)† ..... .50
Refugio light .....
.....(See gravity table) (Gulf Coast)*
Refugio heavy (June 19, 1933)* ..... .45
Markham and High Island .....
.....(See gravity table) (Gulf Coast)
Conroe.....(See gravity table)*

*Humble Oil & Refining Co., Markham by Texas Co., and High Island by Yount Lee Oil Co. †Shell Petroleum Corp.

South Central and Southwest Texas

Darst Creek (June 19, 1933).....See note
Mirando (June 19, 1933).....See note
Luling (July 7, 1933) ..... $.50
Pettus (June 19, 1933) ..... .55
Salt Flat (June 19, 1933) ..... .40
Lytton Springs (July 7, 1933) ..... .50

(Continued on Page 31)

Crude Oil Gravity Table

	North Central and East Central Texas	Oklahoma, Kansas, North Central and East Central Texas	Oklahoma, Kansas, North Central and East Central Texas	North Louisiana and Arkansas	Gray County, Texas	Gray County, Texas	Gray County, Texas	Carson, Hutchinson and Moore Counties, Texas	Carson and Hutchinson Counties, Texas	Carson and Hutchinson Counties, Texas	Conroe, Texas	Salt Creek, Wyo.	Gulf Coast, Texas and Louisiana	Gulf Coast, Texas and Louisiana	Caddo, Louisiana	Homer, Louisiana	Haynesville, Louisiana	Sabine, Dodsio, Sarepta-Carterville, Louisiana	El Dorado, Arkansas
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Below 20	....	....	....	....	....	....	....	....	....	....	....	....	$0.32	$0.32	....	....	....	....	....
20-20.9	....	....	....	....	....	....	....	....	....	....	....	....	.34	.34	....	....	....	....	....
21-21.9	....	....	....	....	....	....	....	....	....	....	....	....	.36	.36	....	....	....	....	....
22-22.9	....	....	....	....	....	....	....	....	....	....	....	....	.38	.38	....	....	....	....	....
23-23.9	....	....	....	....	....	....	....	....	....	....	....	....	.40	.40	....	....	....	....	....
24-24.9	....	....	....	....	....	....	....	....	....	....	....	....	.42	.42	....	....	....	....	....
Below 25	....	$0.30	$0.43	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
25-25.9	....	.32	.45	....	....	....	....	....	....	....	....	....	.44	.44	....	....	....	....	....
26-26.9	....	.34	.47	....	....	....	....	....	....	....	....	....	.46	.46	....	....	....	....	....
27-27.9	....	.36	.49	....	....	....	....	....	....	....	....	....	.48	.48	....	....	....	....	....
28-28.9	....	.38	.51	....	....	....	....	....	....	....	....	....	.50	.50	....	....	....	....	....
Below 29	$0.28	....	....	$0.28	....	....	....	....	....	....	....	$0.38	....	....	$0.26	$0.32	$0.29	$0.35	$0.37
29-29.9	.30	.40	.53	.30	....	....	....	....	....	....	....	.40	.52	.52	.28	.34	.31	.37	.39
30-30.9	.32	.42	.55	.32	$0.45	....	....	$0.35	....	....	....	.42	.54	.54	.30	.36	.33	.39	.41
31-31.9	.34	.44	.57	.34	.47	....	....	.37	....	....	....	.44	.56	.55	.32	.38	.35	.41	.43
32-32.9	.36	.46	.59	.36	.49	....	....	.39	....	....	....	.46	.58	.56	.34	.40	.37	.43	.45
33-33.9	.38	.48	.61	.38	.51	....	....	.41	....	....	....	.48	.60	.57	.36	.42	.39	.45	.47
34-34.9	.40	.50	.63	.40	.53	....	....	.43	....	....	....	.50	.62	.58	.38	.44	.41	.47	.49
Below 35	....	....	....	....	....	$0.57	$0.34	....	$0.47	$0.29	....	....	....	....	....	....	....	....	....
35-35.9	.42	.52	.65	.42	.55	.59	.36	.45	.49	.31	$0.59	.52	....	.59	.40	.46	.43	.49	.51
36-36.9	.44	.54	.67	.44	.57	.61	.38	.47	.51	.33	.61	.54	....	.60	.42	.48	.45	.51	.53
37-37.9	.46	.56	.69	.46	.59	.63	.40	.49	.53	.35	.63	.56	....	.61	.44	.50	.47	.53	.55
38-38.9	.48	.58	.71	.48	.61	.65	.42	.51	.55	.37	.65	.58	....	.62	.46	.52	.49	.55	.57
39-39.9	.50	.60	.73	.50	.63	.67	.44	.53	.57	.39	.67	.60	....	.63	.48	.54	.51	.57	.59
40 and over	.52	.62	.75	.52	.65	.69	.46	.55	.59	.41	.69	.62	....	.64	.50	.56	.53	.59	.61

Column 1—Effective June 19, 1933, Humble Oil & Refining Co., Texas Co., Gulf Pipe Line Co.
Column 2—Effective July 6, Carter Oil Co., in Kansas and Oklahoma; Stanolind Crude Oil Purchasing Co. in Kansas, Oklahoma and North Central and East Central Texas; Tide Water Oil Co. in Oklahoma. July 8, Texas Co. in Oklahoma; Shell Petroleum Corp. in Kansas and Oklahoma; Mid-Continent Petroleum Corp., Rock Island Refining Co., H. F. Wilcox Oil & Gas Co., Champlin Refining Co., Bell Oil & Gas Co., Johnson Refining Co., Eason Oil Co., Deep Rock Oil Corp., Cushing Refining Co., Globe Refining Co., Yale Oil Corp., in Oklahoma. July 12, Gypsy Oil Co. in Kansas and Oklahoma.
Column 3—Effective July 7, Magnolia Petroleum Co. in Oklahoma and North Central and East Central Texas. July 11, Continental Oil Co. in Kansas, Oklahoma and North Texas. July 11, Kanotex Refining Co., White Eagle Oil Corp., Derby Oil & Refining Co., Sunflower Refining Co., Skelly Oil Co., Eldorado Refining Co., in Kansas; Empire Oil & Refining Co. in Kansas and Oklahoma; Sinclair Prairie Oil Marketing Co. in Kansas, Oklahoma, North Central and East Central Texas; Pure Oil Co. in Oklahoma; Philtex Oil Co. in Kansas and Oklahoma; National Refining Co. in Kansas and Oklahoma. July 12, Twin State Oil Co. in Oklahoma.
Column 4—Effective June 19, Texas Co., Gulf Refining Co., Louisiana Oil & Refining Co. Effective June 20, Magnolia Petroleum Co. Effective June 19, Stanolind Oil & Gas Co. in Pine Island district, Louisiana, and Marion County, Texas, posted below 29 gravity, 26 cents, with 2-cent spread upward to 40 gravity and over, 50 cents. For Standard Oil Co. of Louisiana prices see Columns 16 to 20.
Column 5—Effective July 11, Philtex Oil Co.
Column 6—Effective July 7, Magnolia Petroleum Co. Effective July 11, Sinclair Prairie Oil Marketing Co.
Column 7—Effective June 19, Humble Oil & Refining Co., Gulf Pipe Line Co. and Texas Co.
Column 8—Effective July 11, Philtex Oil Co.
Column 9—Effective July 7, Magnolia Petroleum Co. Effective July 11, Sinclair Prairie Oil Marketing Co.
Column 10—Effective June 19, Humble Oil & Refining Co., Gulf Refining Co. and Continental Oil Co.
Column 11—Effective June 19, Humble Oil & Refining Co. Effective June 22, Texas Co. and Tide Water Oil Co.
Column 12—Effective June 17, Stanolind Oil & Gas Co.
Column 13—Effective June 17, Sinclair Prairie Oil Marketing Co. Effective June 19, Humble Oil & Refining Co. and Gulf Pipe Line Co.
Column 14—Effective June 19, Texas Co. Effective June 20, Magnolia Petroleum Co. in Lockport, Louisiana, while in Cameron Meadows and Iowa, Louisiana, it posted below 30 gravity, 22 cents, with 2-cent differential upward to 34 and above at 52 cents.
Columns 15 to 19—Effective June 19, Standard Oil Co. of Louisiana.

(California Crude Oil Prices on Page 31)

TANK WAGON MARKETS

Quotations for gasoline and kerosene in United States, as furnished by the larger marketing concerns, include taxes

July 25, 1933

Taxes

The gasoline quotations given in the following tables include the 1½-cent Federal tax effective June 17, 1933, as well as state, county and city taxes. The gasoline quoted is the regular or standard grade. In most marketing areas a third or competitive grade is generally available at 1 or more cents per gallon under the service station price for the regular grade. Ethyl Gasolines are sold 2 cents above the service station price for the regular grade, effective July 28, except in California, Oregon, Washington, Arizona and Nevada, where differential is 3 cents.

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Inc'lds tax of	Kero. tank wagon
Atlanta, Ga.	21.0	21.0	7.5	10.0
Augusta	21.0	21.0	7.5	9.0
Macon	20.0	20.0	7.5	13.0
Savannah	22.0	22.0	7.5	14.0
Birm'ham, Ala.	24.0	24.0	8.5	13.0
Mobile	22.0	22.0	8.5	8.0
Montgomery	25.0	25.0	8.5	14.0
Jackson, Miss.	21.0	21.0	7.5	11.0
Vicksburg	21.0	21.0	7.5	11.0
Jack'ville, Fla.	21.0	21.0	8.5	13.5
Miami	22.0	22.0	8.5	13.5
Pensacola	19.0	19.0	8.5	13.5
Tampa	22.0	22.0	8.5	12.5
Lexington, Ky.	21.0	21.0	6.5	10.0
Covington	30.0	30.0	6.5	11.5
Louisville	19.0	19.0	6.5	10.0
Paducah	21.0	21.0	6.5	9.0

In addition to the state tax of 4 cents on gasoline, Montgomery has city and county tax of 2 cents on gasoline and one-half cent on kerosene. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fortieth cent on gasoline. To Pensacola, Montgomery and Birmingham state taxes add 1-cent tax. To Mobile state tax add 1-cent city tax. Dealers receive discount of 2 cents off tank wagon price throughout territory.

Southwestern District

MAGNOLIA PETROLEUM CO.

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Inc'lds tax of	Kero. tank wagon
Dallas, Tex.	15.0	17.5	5.5	7.5
Fort Worth	15.0	17.5	5.5	7.5
Houston	15.0	17.5	5.5	8.0
El Paso	15.0	18.0	5.5	8.0
San Antonio	15.5	18.0	5.5	8.0
Texarkana	*16.0	16.0	5.5	†11.0
Muskogee	15.0	17.0	5.5	7.0
Okla City	15.0	17.0	5.5	7.5
Tulsa	15.0	17.0	5.5	7 0
Ft. Smith, Ark.	‡16.4	16.4	5.5	†10.0
Little Rock	‡18.9	18.9	7.5	†10.0

*Less 2½ cents to dealers. †Less 2 cents to dealers. ‡Less 4½ cents to dealers.

Standard Oil Co. (Indiana)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Inc'lds tax of	Kero. tank wagon
Chicago	15.6	15.6	4.5	8.5
Decatur, Ill.	16.0	16.4	4.5	9.0
E. St. Louis	15.3	15.3	4.5	8.3
Joliet	16 0	16 0	4.5	9.0
Peoria	16.0	16.0	4.5	9.0
Quincy	15.8	15.8	4.5	8.8
Davenport, Ia.	16.1	16.1	4.5	9.1
Des Moines	16 1	16.1	4.5	9.1
Mason City	16.1	16 1	4.5	9.1
Sioux City	15.7	15.7	4.5	8.7
Duluth, Minn.	16.7	16.7	4.5	9.4
Mankato	16.3	16.3	4.5	9.4
Minneapolis	16.4	16 4	4.5	9.5
LaCrosse, Wis.	17.8	17.8	5.5	9.8
Green Bay	17.2	17.2	5.5	9.2
Milwaukee	16.7	16.7	5.5	8.7
Madison	16 9	16 9	5.5	8.9
Detroit, Mich.	16.0	16 0	4.5	9.5
Grand Rapids	16.2	16.2	4.5	9.2
Saginaw	16.5	16.5	4.5	9.5
Evansville, Ind.	17.0	17.0	5.5	9.0
Indianapolis	17.2	17.2	5.5	9.2
South Bend	17.5	17.5	5.5	9.5
Fargo, N. Dak.	18.1	18.1	4 5	11 1
Huron, S. Dak.	18.4	18.4	5.5	10 4
Sioux Falls	17.9	17.9	5.5	9.9
K. C. Mo.*	15.2	15.2	4 5	8 2
Springfield*	15.1	15.1	4.5	8 1
St. Louis	14.2	14.2	4.0	7 7
St. Joseph*	14.8	14.8	4.5	7.8
Wichita, Kans.	14.1	14.1	4 5	7 1
Bartlesville, Ok.	14.0	16.5	5.5	8.5

*State tax 2 cents, 1-cent city tax and 1-cent Federal tax.

Effective June 1, 1933—Discounts off tank wagon price to consumers on 500 gallons or more per month in territory outside of Chicago metropolitan area: 2 cents on Ethyl and Red Crown gasolines, and 1 cent on Stanolind gasoline. One-half cent additional discount in Chicago division.

Effective July 1, 1933—Discounts on resellers authorized agent's agreement made off the service station price throughout the territory as follows: 2.5 cents on Red Crown Ethyl and Standard Red Crown gasolines, and 1.5 cents on Stanolind gasoline. Half of reduction from normal service station price shall be absorbed by reseller up to maximum of 1 cent on all grades.

Stanolex Furnace Oil in Chicago

Effective June 27, 1933, prices f.o.b. Chicago, tank wagon prices: No. 1 (36-40 lt. stw. zero), under 100 gallons, 7¾ cents; No. 2 (30-34 stw. zero), 7¼ cents; No. 3 (22-26 zero), 6¾ cents; No. 4 (12-16 zero), 6¾ cents. Viscosity of No. 4, 90-115 at 100° F.; No. 5, 6½ cents; for deliveries of 100 gallons or more deduct 1 cent.

Naphtha

	Tank: Wagon	Tank: Car
Oleum spirits	10.7	6.23
V.M.&P. naphtha	12.7	6.73
Cleaners' naphtha	12.0	9.23
Stanisol	13.0	9.23

Tank wagon prices f.o.b. Chicago, January 4, 1932. Each of above prices subject to discount of 1 cent per gallon for 150-gallon lots if covered by contracts.

Atlantic Coast District

(Effective June 25)

STANDARD OIL CO. (NEW JERSEY)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Inc'lds tax of	Kero. tank wagon
Atl'tic City N.J.	17.7	18.7	4.5	11.2
Newark	17.0	18.0	4.5	8.5
Annapolis, Md.	18.3	19.3	5.5	9.0
Baltimore	17.8	18.8	5.5	8.0
Cumberland	19.3	20.3	5.5	11.7
Wash'g'n, D. C.	16.0	17.0	3.5	10.0
Danville, Va.	20.4	21.4	6.5	9.9
Norfolk	18.9	19.9	6.5	10.3
Petersburg	19.7	20.7	6.5	11.4
Richmond	19.3	20.3	6.5	10.7
Roanoke	20.5	21.5	6.5	11.0
Charls'n, W.Va.	18.7	19.7	5.5	11.6
Parkersburg	18.0	19.0	6.5	10.2
Wheeling	18.7	19.7	5.5	11.2
Charlotte, N. C.	22.1	23.1	7.5	12.5
Hickory	22.4	23.4	7.5	12.7
Mt. Airy	22.4	23.4	7.5	13.8
Raleigh	21.9	22.9	7.5	12.3
Salisbury	22.2	23.2	7.5	12.6
Charleston, S.C.	19.9	20.9	7.5	10.3
Columbia	21.7	22.7	7.5	12.2
Spartanburg	22.1	23.1	7.5	12.5

Note—Dealer contracts for gasoline are written at 2½ cents over the posted tank car price. The posted tank car price is the sum of the tax and 7.5 cents subtracted from service station price. A 2-cent discount allowed for cash at all service stations. Kerosene 1 cent off tank wagon for 25 gallons or more under contract except New Jersey and Baltimore, Md.

New York and Part of New England District

STANDARD OIL CO. (NEW YORK)*

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Inc'lds tax of	Kero. tank wagon
Albany, N. Y.	17.7	18.7	4.5	9.0
New York	17.2	18.2	4.5	8.0
Buffalo	17.9	18.9	4.5	9.0
Rochester	18.0	19 0	4.5	9.0
Syracuse	18.0	19.0	4.5	9.5
Boston, Mass.	17 2	18.2	4.5	8.0
Augusta, Me.	18.7	19.7	5.5	9.0
Manch'tr, N. H.	19 4	20.4	5.5	8.0
Burlington, Vt.	20.0	21.0	5.5	8.5

*All service station prices subject to 2-cent discount for cash.

Central South District

STANDARD OIL CO. (LOUISIANA)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Inc'lds tax of	Kero. tank wagon
N. Orleans, La.	18.8	19.8	*7.5	†11.0
Baton Rouge	18.0	19.0	6.5	†10.0
Alexandria	18.9	19.9	*7.5	†8.5
Lafayette	19.1	20.1	*7.5	†10.0
Lake Charles	19.0	20.0	*7.5	†10.0
Shreveport	16.8	17.8	6.5	†11.0
Knoxville, Tenn.	23.7	23.7	8.5	12.5
Memphis	21.1	22.1	8.5	10.0
Chattanooga	22.4	23.4	8.5	10.0
Nashville	22.0	23.0	8.5	10.0
Bristol	22.6	23.6	8.5	13.0
Lt. Rock, Ark.	19.3	20.3	8.5	10.0

*Includes city tax of 1 cent. †Louisiana kerosene prices include 1-cent state tax. New Orleans kerosene price also includes 1-cent city tax.

Effective June 2, 1933, station price fixed at 7 cents above basic tank car price at key refining points in territory. Discount to cash customers 2 cents off station price. Commercial consumers for tank wagon delivery pay following amounts over tank car price basis yearly deliveries:

1,000 to 75,000 gallons	2.5
75,000 to 300,000 gallons	1.5
Over 300,000 gallons	1.0

Pennsylvania-Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Inc'ds tax of	Kero. tank wagon
Pittsburgh, Pa.	16.0	17.0	4.5	9.0
Philadelphia	16.0	16.5	4.5	9.0
Scranton	16.0	17.0	4.5	9.0
Allentown	16.0	17.0	4.5	9.0
Altoona	16 0	17.0	4.5	9.0
Erie	16.0	17.0	4.5	9.0
Dover, Del.	16.0	17.0	4.5	9.0
Wilmington	16.0	17.0	4.5	9.0
Springf'd, Mass.	17.8	18.8	4.5	8.0
Worcester	17.7	18.7	4.5	8.0
Boston	17.2	18.2	4.5	8.0
Providence, R.I.	16.7	17.2	3.5	8.0
Hartford, Conn.	16.6	17.6	3.5	8.0
New Haven	16.4	17.4	3.5	8.0

Discount schedule effective November 1, 1932. In Delaware and Pennsylvania, 3 cents off station price on purchases of 2,000 gallons or more per month, in remainder of territory 1 cent. Wholesale discount 3½ cents per gallon on monthly deliveries of 20,000 to 100,000 gallons, 3 cents on 100,000 to 300,000 gallons, and 3½ cents on more than 300,000 gallons.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA*

	Gasoline: Tank truck†	Gasoline: Posted retail	Gasoline: Incl'ds tax of	Kero. tank wagon
Fresno, Calif.	17.5	20.0	4.5	14.0
San Francisco	17.0	19.5	4.5	13.5
Los Angeles	16.0	18.5	4.5	13.5
Reno, Nev.	20.5	23.0	5.5	15.5
Portland, Ore.	20.0	22.5	5.5	13.5
Seattle, Wash.	20.0	22.5	5.5	13.5
Tacoma	20.0	22.5	5.5	13.5
Spokane	23.0	25.5	5.5	18.0
Phoenix, Ariz.	17.5	20.0	6.5	‡16.0

*Retail prices posted by Standard Stations, Inc., a subsidiary.

†Above prices are at company's plant or depots as company does not operate stations. A 4-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where the discount is 1 cent. ‡Includes 5-cent state tax.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Inc'lds tax of	Kero. tank wagon
Denver, Colo.	17.0	19.0	5.5	11.5
Pueblo	17.0	19.0	5.5	13.0
Grand Jnctn.	19.0	21.0	5.5	13.0
Casper, Wyo	18.0	20.0	5.5	10.5
Cheyenne	17.0	19.0	5.5	13.0
Butte, Mont.	21.5	23.5	5.5	17.5
Billings	23.0	25.0	6.5	16.0
Great Falls	23.0	25.0	6.5	17.5
Helena	23.0	25.0	6.5	17.5
Salt Lake, Utah	20.0	22.0	5.5	16.0
Albu'que, N. M.	18.0	20.5	*7.5	12.0
Boise, Idaho	23.0	25.0	6.5	18.0
Twin Falls	23.0	25.0	6.5	18.0

*One-cent city tax.

Effective June 1, 1933, dealers and lease and license accounts will receive 2½ cents discount on regular gasoline in Montana, Colorado, Wyoming, Utah and Idaho.

Ohio

STANDARD OIL CO. (OHIO)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Inc'lds tax of	Kero. tank wagon
Ohio points	17.5	*20.5	5.5	†13.5

*Two-cent discount allowed for cash. †Includes state tax of 1 cent, effective July 22.

Nebraska

STANDARD OIL CO. (NEBRASKA)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Inc'lds tax of	Kero. tank wagon
Omaha	16.8	17.8	5.5	9.8
McCook	18.3	19.3	5.5	11.3
Norfolk	17.3	18.3	6.5	10.3
N. Platte	18.3	19.3	5.5	11.0
Scottsbluff	18.3	19.3	5.5	10.8

Discount to dealers and A&A commissions: From service station price: Red Crown Ethyl and Standard Red Crown gasoline, 2½ cents. Rentals under lease and agents' agreement, one-half cent per gallon additional. Discount to consumers under contracts (large consumers under contract and governmental units): On tank wagon deliveries of gasoline on monthly purchases of 500 gallons, or yearly purchases of 6,000 gallons, from the service station price: Red Crown Ethyl and Standard Red Crown gasoline, 2 cents per gallon.

Canada*

IMPERIAL OIL, LTD.

Imperial 3-Star Gasoline

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Inc'lds tax of	Kero. tank wagon
Hamilton, Ont.	23.5	25.5	6.0	15.5
Toronto, Ont.	23.5	25.5	6.0	15.5
Brandon, Man.	29.0	32.5	7.0	17.5
Winnipeg, Man.	26.0	29.5	7.0	17.5
Regina, Sask.	29.0	33.0	6.0	21.5
Saskatoon, Sask.	31.0	35.0	6.0	23.5
Edmonton, Alta.	29.5	33.5	6.0	22.5
Calgary, Alta.	26.0	30.0	6.0	19.0
Vancouver, B.C.	26.5	29.5	7.0	22.5
Montreal, Que.	23.0	25.0	6.0	15.0
St. Johns, N.B.	24.5	28.5	7.0	20.5
Halifax, N.S.	23.5	27.5	6.0	20.5

*Imperial gallon used in Canada.

TANK WAGON CHANGES

Atlantic Refining Co., effective July 17, advanced gasoline tank wagon and service station prices 1 cent in Pennsylvania and Delaware.

Continental Oil Co., effective July 14, advanced gasoline tank wagon and service station prices 1 cent in Utah except southern half of Idaho where prices were subnormal and the latest advance totaled 2 cents. The 2-cent advance includes Salt Lake City. Effective July 17, gasoline tank wagon and service station prices advanced one-half cent in Panhandle of Texas.

Standard Oil Co. (Ohio) advanced kerosene tank wagon price 1 cent effective July 22, due to state tax of 1 cent, which became effective that date.

Magnolia Petroleum Co. advanced the kerosene price in Fort Smith, Ark., to 10 cents on July 18.

Petroleum Imports and Exports Decline in May

Exports and imports of practically all kinds of petroleum products fell off during May compared with those for the previous month, according to the Department of Commerce. The following table gives a comparison of these movements for the two months.

EXPORTS

(Barrels)

	April, 1933	May, 1933
Petroleum, crude	2,939,272	2,677,922
Natural gasoline	102,660	77,795
Gasoline, naphtha and other finished light products, in bulk	2,035,056	1,890,605
Gasoline, naphtha and other finished light products, in containers	59,002	64,477
Illuminating oil, in bulk	613,635	534,131
Illuminating oil, in containers	77,490	63,512
Gas oil and distillate fuel oil	895,165	1,073,130
Residual fuel oil	548,310	749,043
Lub oil, red and pale	480,810	394,234
Lub oil, black	57,705	41,546
Lub oil, cylinder	215,854	208,291

(Gallons)

Mineral spirits	264,063	119,028
Insulating or transformer oils	106,054	66,205
Light lub oils in small packages	6,119	33,416

(Pounds)

Lub greases	5,676,686	5,630,388
Paraffin wax, unrefined	9,413,676	6,581,450
Paraffin wax, refined	16,271,676	12,336,745

(Tons)

Petroleum asphalt	7,022	13,593
Petroleum coke	13,223	11,244

IMPORTS

(Barrels)

Petroleum, crude	2,909,539	2,206,169
Fuel oil, including topped petroleum	1,413,758	719,891
Gas oil	154	...
Paraffin oil, not lub.	86	130
Liquid derivatives of petroleum, n.e.s.	396	848
Gasoline and other motor fuel	726	599
Illuminating oil (kerosene)	158	1,024
Lub oils, including paraffin oil	471	453

(Pounds)

Paraffin and paraffin wax	622,447	1,444,981

TESTING ISLAND OF OLAND

New efforts are being made to find oil on the Island of Oland, belonging to Sweden, long noted for the gas which seeps from its peculiar limestone formation. Electrical equipment is being used.

NEWS FOR SALES DEPARTMENTS

Start Plans to Organize Oil Marketers Association

Preparations to organize a new oil marketers association which will be national in scope were under way during the past week. One of the purposes of the organization is to furnish a medium of contact with the government in carrying out its plan to supervise and direct all operations in the oil industry.

In connection with the plans of the new organization, Paul S. Hadlick made the following statement: "On July 6 I tendered my resignation as secretary of the Division of Marketing of the American Petroleum Institute, a position which I have held since the creation of the department early in 1930. Since it has been announced that my resignation was to become effective on August 1, I have been urged by many oil jobbers, refiners and representatives of state associations to form a new association which would really be a national oil marketers organization; a group national in scope, with offices and representatives in Washington which would be of service to these people in connection with their growing list of problems before the Federal Government.

"Feeling that there is a place and a need for such an organization, and on the request of a substantial group of those above referred to, I have consented to devote such time as is necessary to that work. On August 1 an office will be opened in Washington which will be prepared to act not only as the representative of any state group but as the representative of individual operators throughout the country. For the time being, and until proper action can be taken, the organization will be known as the National Oil Marketers Association, and its temporary address will be P.O. Box 1515, Washington, D. C.

"Membership in the proposed organization will be open to refiners, jobbers and distributors who desire to avail themselves of the services which can be rendered. Membership dues, which will be announced in due time, will be based on volume of sales.

"In the very near future there will be an organization meeting at a convenient time and place, where the corporate setup will be perfected, officers elected and detailed program laid out."

Heavy Gain in June Auto Production Over Year Ago

That the recent improvement in the motor industry has exceeded expectations was disclosed Wednesday noon in a preliminary estimate released by the National Automobile Chamber of Commerce, placing the production of chamber members for June at 195,178 units.

This was an increase of 104 per cent over the output of the same group of manufacturers for the corresponding month in 1932 and was a gain of 13.2 per cent over the production for May of this year.

On the basis of this estimate, chamber members, comprising all but one of the major producers in the industry, closed the first half with an aggregate output of 800,290 cars and trucks—a gain of 17.6 per cent over the first half last year. The chamber estimate is based upon reports of factory shipments.

Production of chamber members is summarized as follows: June, 1933, 195,178; June, 1932, 95,713; May, 1933, 172,276; six months of 1933, 800,290; six months of 1932, 680,218.

Range Oil Burners Require Kerosene Or Highly Refined Distillate as Fuel

The range oil burners, the use of which in homes and other buildings is rapidly increasing, generally require a high gravity refined distillate or kerosene as fuel according to information obtained from representative manufacturers. No color requirement was listed by the manufacturers. The range oil burner must have a fuel which will vaporize readily. It is estimated that over 500,000 of this type burners are now in use in the New England states and it is predicted that the demand will spread to other sections of the country. This type of burner is taking the place of the wick type equipment which requires kerosene as fuel. The vaporizing type burners are now being used for light heating and cooking, one of the largest applications being in coal ranges where the oil takes the place of coal as fuel.

Following are some of the replies received from manufacturers covering the specifications of oil required by their burners, including comments regarding consumption and prices:

Reply No. 1.—Our No. 1 burner requires 1 pint per hour. Our largest burner consumes 1 quart per hour. We have best results with an oil selling in New England for 8 to 9 cents per gallon having the following specifications:

Sediment, per cent	.01
Water	Trace
Sulphur, per cent	0.132
Carbon residue, per cent under	.01
Gravity, deg. Beaume at 60° F.	42.3
Flash, Pensky-Martin, deg. F.	132
Viscosity, Universal sec. at 70°	44
	Deg. F.
Distillation, initial	330
Distillation, 10 per cent	378
Distillation, 20 per cent	394
Distillation, 30 per cent	408
Distillation, 40 per cent	421
Distillation, 50 per cent	435
Distillation, 60 per cent	448
Distillation, 70 per cent	460
Distillation, 80 per cent	470
Distillation, 90 per cent	502
Distillation, endpoint	541
	Per cent
Distillation, recovered	97
Distillation, residue	1

Reply No. 2.—The oils used in our burners vary in specifications but in general the following come within our requirements:

Gravity, Be.	40–44
Thermalviscosity	350–400
Flashpoint	125–140
Endpoint	510–550

Reply No. 3.—At present the American Oil Burner Association is endeavoring to prepare a standardized set of specifications but they are finding this a very difficult procedure and no definite decision has been reached. Tentative specifications have been prepared and a copy of these may be secured from the association's headquarters, 340 Madison Avenue, New York City. In general we find that kerosene will operate indefinitely in a good range without leaving carbon formation or requiring service attention of any kind. With oils of inferior grade, carbon deposits will be formed and the burner will have to be cleaned at more or less frequent intervals depending upon the grade of oil used. With ordinary No. 1 fuel oil, we have found that the average range burner will give about one week of continuous operation. With the better grades of commercial range burner oil the burners will operate for several months without requiring cleaning. In other words, the closer the range burner oil approaches kerosene in general characteristics the more satisfactory it will be for a vaporizing burner of this type.

Reply No. 4.—We recommend the use of a distillate oil of between 40 and 45 degrees gravity. This should be a naturally distilled oil and should not be blended of a heavy and a light oil to get the proper gravity.

Reply No. 5.—Following are the specifications for oils used in our burners: 38 to 45 degrees Be. gravity with a flashpoint of 115° F. Never use a heavy or dirty oil. Do not use furnace oil. Western oils preferred. In addition, the oil used should have as little sulphur and asphaltum as possible. The consumption of a double burner used in a regular range will average 4 gallons in 24 hours; a single burner will consume 2 gallons in 24 hours.

Reply No. 6.—In many New England towns a regular kerosene is sold as range oil. The retail price is 8 cents per gallon. A regular range burner oil can be used in our equipment. This has a gravity of 36-40 Be., minimum flash of 110° F., maximum 165° F. using Pensky-Marten closed cup tester, distillation test showing 10 per cent in receiver at 420° F. and endpoint of 600° F. maximum. This is the heaviest fuel which can be successfully used in range burners.

Reply No. 7.—Our burner is designed to give best results on ordinary kerosene or coal oil. If range oil is available, this also is a suitable fuel. So-called "furnace" or "fuel oils" should never be used. Neither should it be operated on highly volatile products such as gasoline, nor should crankcase drainings ever be used.

Reply No. 8.—Our burner is entirely different in operation than any burner on the American market in that the oil is preheated and generated into gas before it is burned and the wicks are never in oil after the burner is hot, thus eliminating the necessity for frequent cleaning and giving much more intense heat. We find that 40-42 is the proper grade of oil for use in burners of the distillate type as this has no heavy properties which will cause carbonization or muck to form in the base. It is possible to use a 38-40 oil but in some instances where the companies are not so particular with their product we find a large amount of muck will form in any burner after a given time. In our burners we find that the average consumption in the 4½-inch size will run between three-quarters of a gallon and 1¼ gallons over a period of 24 hours; in the 6½-inch burner from 1½ to 2¼ gallons during 24 hours, and the 9-inch burner around 3 gallons.

CANADA USES LESS GASOLINE

CHATHAM, Ontario, July 22.—The consumption of gasoline in Canada during April amounted to 30,711,000 gallons as compared with 26,416,000 gallons in March and 35,358,000 gallons in April, 1932.

Comparative figures for the various provinces, in gallons, are as follows:

	April 1932	April 1933
Prince Edward Island	96,000	130,000
Nova Scotia	896,000	1,000,000
New Brunswick	484,000	417,000
Quebec	5,797,000	5,070,000
Ontario	17,426,000	16,412,000
Manitoba	2,059,000	1,219,000
Saskatchewan	2,246,000	1,377,000
Alberta	2,883,000	2,527,000
British Columbia	3,371,000	2,950,000

The figures are based on the gasoline tax returns of the various provinces.

Wine-Colored Red Crown Gasoline Is Now Available

The Standard Oil Co. (Indiana) has made its new wine-colored ethylized Red Crown gasoline available at practically all of its marketing points within the past week. The introduction of this new motor fuel at the company's stations followed an elaborate advertising campaign in which a statement by Edward G. Seubert, president, was featured.

Mr. Seubert's statement, in part, follows:

"Driving conditions are changing—speed is the order of the day. Motors are changing—compressions go higher and higher to meet the demand for greater power. Standards are changing—never has the public been a shrewder judge of value than today. Refining methods are changing—during the past year we have spent millions of dollars in equipment to enable us to turn out a finer, purer, more accurately controlled product than ever before. . . . So we offer you a new gasoline. It meets the specifications of many premium priced fuels. Yet it will cost no more than the old Standard Red Crown. Try it. We know you will find it worthy of the name Standard.

"Some regular gasolines equal Standard Red Crown in one or two qualities—not one surpasses it, and we believe that not one equals it in all the essentials of good gasoline. It has the following features:

"1. Top antiknock rating for its price class.

"2. Unsurpassed in starting, acceleration or mileage.

"3. Free from harmful sulphur and gum.

"4. Seasonably adjusted for maximum power.

"5. Absolute uniformity in performance.

"6. Fresher because of Standard popularity.

"7. Sells at the price of regular."

J. H. Herbert, Chairman of Accident Prevention Group

Appointment of J. H. Herbert, Standard Oil Co. of Ohio, as chairman of the committee on accident prevention in marketing for 1933 has been announced by W. T. Holliday, as chairman of the general committee, division of marketing, of the American Petroleum Institute. At the same time announcement was made that following an organization meeting of the newly constituted committee on credit practices eight regional subcommittee chairmen from the membership of the committee have been designated as follows: Northeastern region, W. M. Watson; eastern region, H. R. Wakefield; southeastern region, R. P. Resor; Mid-Continent region, C. E. Votrian; southwestern region, H. G. McLean; Rocky Mountain region, George F. Smith; Pacific Coast region, Frank E. Lee.

J. C. Steidle, vice president and treasurer of the Standard Oil Co. of Kentucky, Louisville, has been appointed to membership on the committee on credit practices.

PENNZOIL OBTAINS BIG ORDER

The Pennzoil Co. of Oil City, Pa., has been awarded a contract to supply the United Air Lines with motor oil in the operation of the latter's air lines. The contract covers a year and calls for the delivery of between 300,000 and 400,000 gallons of oil.

Increasing Consumption Makes for Firm Markets in Refined Products Along the East Coast

By A. E. MOCKLER
New York Bureau, The Oil and Gas Journal

NEW YORK, July 24.—Increasing consumption of major refined products has made for continued firmness in East Coast oil markets during the past week, and, while further price advances have been lacking, markets have been well maintained at recently increased levels, and the present period of quiet, from the standpoint of price fluctuations, is regarded as a "breathing spell" for the consolidation of recent upward price revisions and the gearing of the market for a resumption of the move toward higher levels.

Gasoline, lubricating oils, and fuel oil in particular, have come in for substantially increased consuming demand during the past few weeks, and prices are strong on all three products, with the first two showing evidences of early price increases. In the remainder of the market it is generally felt that pending formal ratification of the industry's code of fair trade practices, will make for materially increased prices on some products, which have been selling at cost or under, as a result of sharp price competition from some quarters.

With the era of "gallonage at any price" apparently at an end, it is apparent that drastic revisions in sales procedure will be found necessary by many marketers in the East, and it is expected that some organizations in the industry will experience difficulty in adjusting their operations to the changed conditions which are looked for. The major units, which have developed their sales operations along scientific lines, stressing quality of products, research, and service to consumers, will find themselves "on top of the heap," from the competitive standpoint, with the provisions of the code sufficient armor against the shafts of price cutting which have proved so demoralizing to their operations during the past few years.

East Coast refiners and marketers are watching with close interest developments in East Texas, where movement of hot oil is reported to have come to a complete standstill since the intervention of the administration with its order requiring a "certificate of origin" on all shipments either interstate or export. The halt of illegal shipments of East Texas crude, it is felt, will halt the sale of this oil to small refiners at prices under the posted level, and the resultant improvement in the position of the gasoline market, through the forced raising of motor fuel prices by refiners no longer able to obtain an "edge" on their crude costs, will react to the advantage of the entire market. With all refiners placed on an equal footing, from the standpoint of crude costs, the gasoline market is expected to show more stability, with a restoration of a normal profit margin on refining operations, something which has been missing from the industry for the past year or more.

Refinery Gasoline

Refinery gasoline markets in this area are showing an advancing tendency, but the upward move has not as yet become general, and it is not expected that an increasing taking in the entire area will be made until the current week. One independent advanced the tank car market on highest gasoline one-quarter cent to 6¼ cents per gallon locally during the week, but the majors did not follow this action, and the market is quoted at a range of 6 to 6¼ cents per gallon in New York Harbor, with regular U. S. Motor posted at 5.75 to 5.90 cents per gallon. Philadelphia sellers are posting unbranded gasoline at 5½ to 5¾ cents, with highest at 5¾ to 6 cents. Boston tank car market is unchanged at 5.95 cents per gallon for unbranded and 5.95 to 6.30 cents for highest, while Baltimore sellers quote U. S. Motor at 5½ to 5¾ cents, and highest at 5¾ to 6 cents per gallon. The tank car market at Charleston has remained unchanged at 5¼ cents for unbranded and 5¾ to 6 cents for the highest product.

There has been a continued heavy movement of gasoline in the tank car market throughout the week, with distributors keeping their storage full in the expectation of an early increase of a quarter cent per gallon or more.

East Coast refiners are still bringing in California and Gulf Coast gasoline to round out their distributing requirements here, and operations of East Coast refineries are still at a low ebb for this season of the year.

Tank car movement of aviation gasoline was reported to have shown some increase during the week, with principal sellers quoting "fighting grade" aviation motor fuel at 11 to 12 cents per gallon. Aviation gasoline prices have remained stationary in the face of the recent upward move in motor gasoline quotations.

Tank Wagon Gasoline

A marked degree of uniformity in tank wagon and service station prices has become apparent in East Coast markets during the past few weeks, and there is less price cutting now than for many months.

With the motoring season at its height, marketers are devoting more attention to their third grade, and gallonage on these products is on the increase. Most of the major companies now have branded third grades, and are featuring low prices where necessary to meet competition. Third grades are generally posted at 2 to 2½ cents per gallon under first quality gasolines.

There were no general revisions in posted tank wagon or service station prices in this territory during the week, but marketers are looking for an early advance of one-quarter to one-half cent per gallon.

The competitive situation in Pennsylvania will be further stiffened by the entry of Continental Oil Co. and Shell Eastern into that State, both of these companies having received charters to operate in Pennsylvania during the past week. Sun, Atlantic Refining, Tide Water, Sinclair and Standard of Pennsylvania are at present the major marketers distributing in the Keystone State.

Kerosene

Refinery movement of kerosene was reported to be holding up exceptionally well for this season of the year, and the market continued firmly held at a range of 5 to 5¼ cents per gallon for 41-43 water white in tank car lots, f.o.b. terminals.

Fuel Oil

Bunker oil prices were firmly held at the increases put into effect earlier in the month, and refiners reported that they were getting a larger volume of business as steamship operations continue to expand.

Imperial Oil, effective July 15, has advanced Bunker "C" quotations 5 cents per barrel at principal eastern Canadian ports, including Montreal, Quebec, Halifax and St. John. The company has changed its selling basis, and is now quoting bunker and Diesel oils in Canadian currency, instead of in United States currency, as heretofore.

California bunker oil is moving eastward in limited volume, and import movement of this oil has increased considerably since the start of the month, at which time imports in bond for fueling foreign ships at United States ports were permitted to be inaugurated. During the first two weeks of July 703,000 bbls. of foreign fuel oil were imported, as compared with imports of but 138,000 bbls. of this oil during the first half of June.

Diesel Oil

There were no further changes reported in posted prices for Diesel oil, the market here continuing at $1.75 per barrel, in bulk, f.o.b. terminals, for marine delivery, and 4 cents per gallon in tank car lots, f.o.b. terminals.

Gas Oil

Aside from contract deliveries, which were well maintained during the past week, the gas oil market continued in quiet position.

Furnace Oil

Strong markets for domestic heating oils continue, but with consumption at its low ebb for the year, refiners have not yet revised their prices in line with recent advances at other points.

Wax

Steady improvement in demand for paraffin wax is reported in the local market, and prices are strongly held at the recent advances put into effect for both domestic and export deliveries. Crude scale quotations were advanced during the week, and if this increase can be maintained traders look for a general increase of from one-eighth to one-quarter of a cent per pound on fully refined grades.

Domestic consumers have come into the market for supplies in considerable quantities during the week, and are believed to be building up their depleted inventories in anticipation of still higher prices later in the year. Export demand has likewise shown an increase.

Petrolatum

While there were no price changes reported on petroleum, the stronger market for eastern crude oils is expected to force an upward revision in the posted prices for this product shortly.

Lubs

Gallonage on cylinder oils and bright stocks has been well maintained in the face of the recent price increases, and last week's market continued strong.

Exports and Imports of Refined Products; Receipts of California Oil in the East

NEW YORK, July 24.—Federal orders placing shipments of illegally-produced oil under a ban, including export as well as interstate movement, tended to upset export crude oil markets during the past week, illustrating the extent to which hot oil has figured in export trading during recent months. Prior to the clamping down of the lid on bootleg shipments in mid-week, large quantities of crude oil had been shipped to Gulf loading terminals for export, and some of this oil was offered for shipment abroad at prices less than those quoted for legally-produced oil. Export buyers, however, were not inclined to close for this hot oil when it became known that a certificate of origin, certifying to the fact that the oil had been legally produced, would be necessary to secure export clearance, and at the close of the week the export market was trending upwards, with 97½ cents a barrel, f.o.b. Gulf export terminals, apparently the inside quotation for August shipment, and sellers withdrawn from the market on crude for September loading.

A leading factor in the export division of the market was reported to have closed for 12 cargoes of East Texas oil for shipment to France, one cargo per month, delivery to be made on the basis of average posted price in the field on date of tanker loading at the Gulf, plus a stated differential to cover pipe line, handling and other charges. A number of operators had been figuring on this business, the inquiry for which had been in the market for several weeks.

Inquiries for a number of other export cargoes of crude oil were reported pending at the close of the week, with buyers deferring the actual closing of contracts pending further clarification of the export situation with respect to consignments of "hot oil" which are known to be available at some export loading terminals. If this oil is permitted to be cleared from the market, it is expected that it will go at from 2½ to 7½ cents per barrel under the posted price, plus pipe line and loading charges.

Cargo trading in the export gasoline market, in so far as open market operations were concerned, was virtually at a standstill during the week. Quotations on export gasoline remained nominally unchanged, with indications of an early increase on all grades, in sympathy with the stronger domestic market, which is now quoted at substantially higher levels than the export division. Export kerosene was likewise dull and unchanged during the week.

There has been a steady improvement in South American demand for refined products, and shipments of gasoline, kerosene, and other refined oils from Atlantic Seaboard refineries to South American countries are showing considerable increase. With the American dollar on a competitive basis with other currencies in world foreign exchange markets, American oil exporters are experiencing a marked revival in demand for refined products produced in this country, which are once again in position to compete on a price basis with refined products exported from other countries with depreciated currencies.

Imports

Imports of crude and refined petroleum at the principal United States ports for the week ended July 15 totaled 1,077,000 bbls., a daily average of 153,857 bbls., compared with 1,115,000 bbls., a daily

(Continued on Page 30)

NEWS FOR PETROLEUM REFINERS

British Company to Build Large Hydrogenation Unit

NEW YORK, July 24.—Imperial Chemical Industries, Ltd., will start the immediate construction of a $12,000,000 hydrogenation plant near Middlesborough, England, for the production of gasoline and other refined oils from coal, according to reports from London this week.

The project of Imperial Chemicals has been made possible by the decision of the British government to grant a minimum preference of fourpence (8 cents U. S.) per gallon in favor of gasoline manufactured from British coal for a period of 10 years. This action will be taken both as an aid to the British coal industry, and to permit Imperial Chemicals to proceed with the erection of commercial plants for hydrogenation gasoline to compete actively with motor fuels refined from petroleum.

Prime Minister MacDonald, in making the announcement in the House of Commons, said the guarantee would apply to all light hydrocarbon oils manufactured in England from indigenous coal, shale and peat and that legislation would be introduced in the autumn to take effect April 1, 1934, and remain for 10 years. The plan is believed to have the double purpose of finding more employment and developing a local source of gasoline for which Britain now is almost entirely dependent on other countries.

"It will mean," Mr. MacDonald said. "that about 7,000 men will be directly employed and a slightly less number indirectly. The particular plant we have in mind will be capable of producing about 100,000 tons of motor gasoline, or roughly 30,000,000 gallons yearly. It will consume about 350,000 tons of coal yearly, giving employment to over 1,000 miners in addition to those employed on the plant."

World patents to the hydrogenation patents are held jointly by I. G. Farbenindustrie, Standard Oil Co. (New Jersey) and Imperial Chemicals.

Appoint Andrews Manager of Bradford Refining Co.

BRADFORD, Pa., July 22.—John Andrews has been elected general manager of the Bradford Oil Refining Co., which has operated a refinery here for several years. He succeeds Ray Beck, who had been plant manager for 12 years. He resigned to engage in private business.

Howard Salisbury, who has been employed as chief chemist at the local refinery, has been placed in charge of plant processing. J. Harvey Rose will continue as president of the company and Harold Loveless as sales manager. The company recently has made important improvements at its refinery.

SINCLAIR BUYS CANS

The Sinclair Refining Co. which recently inaugurated a plan of selling motor oils in sealed cans has placed an order for 4,000,000 cans with the Continental Can Co. The seals of the sands are broken at the time the oil is sold to the car owner so that substitution of inferior oils is not possible at Sinclair stations. The problem of disposing of empty cans is being solved with the installation of presses for converting the cans into bales.

JOINS WARNER-QUINLAN CO.

Robert E. Trimble has joined the Warner-Quinlan Co., New York, as assistant general sales manager. Mr. Trimble formerly was vice president of the Western Oil Refining Co.

Refinery Managers Make Plans to Apply Maximum Hours of Employment Plan

Managers of refineries and natural gasoline plants over the past week have been giving consideration to the probable workings of a new minimum wage and maximum hour scale for employment which is expected to become effective throughout the oil industry early in August. At this writing, hearings were under way at Washington, D. C., covering a code of practices for all branches of the oil industry and wage scales and hours of employments were to be incorporated in the code before governmental approval under the National Recovery Act could be obtained. Recommendations of a majority of the oil industry called for a maximum 40-hour week and a minimum wage which in some sections would be as low as 40 cents per hour.

A check of representative refinery operators in the Mid-Continent showed that all were considering plans to make the new plan effective as soon as finally approved by the Government. While wage and working conditions vary at the more than 100 operating refineries in the Mid-Continent, most plant managers for some time have been pursuing a policy of spreading employment as much as possible and if a 40-hour week is adopted it can be made effective immediately.

In most cases the refineries are operated with three eight-hour shifts. The maintenance and construction employes are employed during the day working usually from 8 to 10 hours. In some cases in order to keep more men employed the shift men have worked five days a week with a stagger arrangement so that employes work about 40 hours a week, the maximum now proposed. The same plan has been followed out for maintenance and office employes located at the plants. In a few cases at least operators have shut down their plants completely over a part of the month so that the total hours of employment for the month would equal 40 hours per week. Several managers prefer this method of operation especially during the winter months when the demand for petroleum products falls off.

Among the smaller plants including many located in the East Texas fields, it is said that hours of employment are often much greater than at the older and larger refineries. Cases are cited in which the refineries are operated by shift men working 12 hours a day, seven days a week. While the hourly pay for shift men at most refineries is much above the 40-cent proposed minimum, cases are reported at the smaller plants in which the wage scale is as low as 25 cents per hour with common labor receiving as low as 15 cents per hour. It is claimed that these low wage scales and long hours account in part for the fact that some small temporary plants have been able to operate profitably while larger permanent units have shown losses over the past year.

If the 40-hour week is officially adopted some operators will adopt four shifts of six hours each at their plants for their operating crews while others prefer to continue the eight-hour shift with a five-day week. The four-shift plan has been tried at several plants. On a seven-day shift this means 42 hours per week. Presumably this would mean the additional two hours per week would have to be offset by layoffs during the month under the 40-hour maximum plan. Several operators prefer the five days of eight hours each for the reason it gives the employes a vacation of two days each week.

All the plant managers interviewed welcomed the chance to furnish jobs for additional men. In many cases the plant superintendents have been giving extra men a few days employment monthly with the hope that conditions would change and men employed full time during more prosperous periods could be returned to regular employment. The point was emphasized, however, that if more men are to be employed and the same or higher wage scales maintained, prices must be advanced for refinery products. Profits in the average Mid-Continent refinery operation have been conspicuous by their absence over the greater part of the past two years. Failure to advance prices for refinery products in line with increased labor costs under the government plan would mean that wages and salaries of skilled employes would have to be reduced to take care of the additional men employed at the plants and other phases of refinery operations.

In regard to employment, it is pointed out, that with a return to profitable prices for refinery products, most plant managers have a large amount of maintenance and new construction work to do as soon as the necessary financial support is available. Many managers have reduced these expenditures to a minimum over the past two or three years due to unsatisfactory conditions.

REFINERY WORK UNDER WAY

NEW YORK, July 24.—Construction work on Pan American Petroleum's new refinery at Houston is progressing favorably, and it is expected that the plant will be completed and in operation by April, 1934, it is learned here.

The refinery is being equipped with cracking equipment by the M. W. Kellogg Co., and will be able to handle 25,000 bbls. per day, with the refinery equipped to run on East Texas crude.

Storage for approximately 2,000,000 bbls. of crude oil and refined products will be installed at the plant.

Two loading docks for loading ocean-going tankers are to be built at the refinery. Refined products will be moved to the eastern seaboard largely, no exports being planned from the Houston refinery. Whether the company will charter tankers or acquire vessels of its own is not yet known, its former extensive tanker fleet having been taken over by the Standard Oil Co. (New Jersey) in the deal last year whereby Standard acquired all of the foreign properties of Pan American.

ETHYL CORPORATION BUYS CARS

The Ethyl Corp. has placed an order for 12 special tank cars in which to transport Ethyl fluid. The cars will be supplied by the General American Transportation Corp. This represents a 66 per cent increase in the Ethyl Corp.'s tank car fleet.

J. R. REID RECEIVER

AUSTIN, Tex., July 22.—J. R. Reid, Austin, has been appointed receiver for the Gladetex Refining Co. and the Johnsonville Refining Co. of the East Texas oil field. He was named in state suits on claims for gasoline taxes.

Globe Company to Employ Four Shifts at Refineries

Effective August 1, all refinery employes of the Globe Oil & Refining Co. will be placed on a six-hour work day at the wage rate now paid for the eight-hour day. Announcement of the plan was made last week by I. A. O'Shaughnessy, president.

Approximately 500 men employed by the company at its three refineries at McPherson, Kans.; Blackwell, Okla.; and Lamont, Ill., will be affected, Mr. O'Shaughnessy said, and approximately 200 additional men will be employed to comprise a fourth shift.

In commenting upon the new policy, Mr. O'Shaughnessy said:

"I have always believed in and advocated shorter working hours and fair and just wages for workers. The Federal Government should have launched three years ago on a plan of this kind. The industries would have followed the Government's example."

A.S.M.E. Committee Issues Heat Exchanger Practices

A short test sheet for tubular heat exchange equipment for oil refining service has just been issued by the petroleum refining committee of the A.S.M.E. Last fall the committee issued its "Recommendations for Oil Refining Heat Exchangers" at which time it announced that a shorter test sheet was being prepared.

The recommendations are gradually coming into wide use, according to T. H. Hamilton, chairman of the committee. They were developed as the result of a suggestion made by Walter Samans, chief engineer of the Atlantic Refining Co., in his paper presented at a meeting of the society in May, 1931.

The recommendations outline a procedure for design, construction practice and testing of heat exchange equipment intended for oil refinery service, and consist of four distinct parts: Part 1, emphasizes the data that the refiners should supply to the manufacturers when requesting proposals on heat exchange equipment. Part 2 deals with the shop inspection and shop tests for tubular heat exchange equipment. Part 3 outlines the specifications for conducting performance tests on tubular heat exchange equipment after it has been put into operation. Part 4, the appendix, deals with general subjects as (1) factors of design, (2) fouling resistance and (3) methods of cleaning, besides general comments concerning the preceding parts of this code.

NATURAL HYDROGENATION

WASHINGTON, D. C., July 24.—Speaking before the International Geographical Congress Wallace E. Pratt, president of the Humble Oil & Refining Co., stated that over a period of many years the same process of hydrogenation of oil has been in progress under the surface of the earth as is now accomplished in modern plants. He explained that as the animal and vegetable deposits decomposed under conditions of elevated temperatures and pressures to form oil particles there was an impregnation of these particles with hydrogen gas resulting from the dissociation of methane. The heat and pressure of the earth was not as intense as that used in man-made equipment but this was compensated by the longer time taken to complete the reaction.

NATURAL GASOLINE MANUFACTURE

Have Three Weeks to File Brief in Gas Pressure Case

First Assistant Secretary of the Interior T. A. Walters has granted three weeks starting from July 17 for the filing of briefs in the appeal of the Deep Rock Oil Corp. against certain rulings of the Commissioner of Indian Affairs made October 18, with respect to the gas pressure as a basis for royalty payments, etc., when the gas is produced from restricted Indian lands.

Rulings of the commissioner in October and subsequent opinions of officers in the U. S. Geological Service have indicated that steps were being taken to materially alter the normal procedure for the purchase of gas and the payment of royalties on Indian lands that might ultimately be adopted by states and in the majority of cases would work an unreasonable hardship on the producer and natural gasoline plant manufacturer.

It will be remembered that the original ruling of the commission called for the payment of royalty on gas produced on these restricted Indian lands on a pressure basis of 10 ounces instead of 2 pounds; that no allowance be made for boosting the gas pressure; denied the right to deduct items incidental to the boosting operation and denied the use of any portion of the gas for plant operations.

After hearing the testimony of the experts in Washington on July 17 sent by the Mid-Continent Oil and Gas Association, the Natural Gasoline Association of American and the natural gas interests Secretary Walters assured those in attendance that he had a clearer understanding of the operating problems involved and indicated that he would not approve of a change, the object of which was to arbitrarily increase royalty payments at the expense of producers and manufacturers who were already burdened with low prices for their products.

W. O. Beall, attorney for the Sinclair Refining Co. headed the group which filed the plea of intervention and represented the Mid-Continent Oil and Gas Association. W. F. Semple, attorney for the Deep Rock Oil Corp., led in the cross examining of expert witnesses.

The parties who have intervened will file their brief in the allotted time and have been assured of receiving any answers to their brief that may be filed so that an equitable decision may be ultimately arrived at.

WARREN INCREASES TERMINAL

The Warren Petroleum Co. has purchased the second natural gasoline pressure tank of special design to be erected at the company's terminal at Norsworthy near Houston, Tex. The later tank to be purchased will have 55,000 bbls. capacity and will be completed about the middle of October. The first tank is nearing completion. This will have 38,000 bbls. capacity.

The tanks have been designed to withstand 6 pounds pressure.

ABSORPTION PROJECT DROPPED

CHATHAM, Ontario, July 22.—Announcement is made that negotiations by Ambassador Oils, Ltd., with independent operators in the Turner Valley Field for construction of a gasoline absorption and carbon black plant have been dropped, owing to inability to purchase gas from a number of independent companies in the central field. Some 22 independent companies signed up have been released from their sales agreements. An estimated outlay of $1,000,000 was contemplated.

East and Gulf Coast Refiners Further Curtail Their Use of Natural Gasoline

During the first five months of this year natural gasoline represented a lesser portion of the total motor fuel manufactured in the United States than the average for any year since 1925. This is based upon the respective yield of straightrun, cracked and natural gasoline per barrel of crude run at refineries as shown in the latest Bureau of Mines report.

For this period this year natural gasoline represented 2.8 per cent of the crude processed, straightrun represented 22.9 per cent and cracked 20.7 per cent. This decline in the proportion of natural helped to account for the decline in the total yield of gasoline from crude which during the past five months has been 46.4 per cent, the lowest it has been since 1929.

The decline in the total yield from crude has been the product of several factors. The abnormally low prices have not permitted refineries to add cracking facilities on a large scale as they had done year after year since 1924. Those units that were added were for the purpose of reforming in most cases and this accounts for the lesser production of straightrun gasoline.

The demand for gasolines of high antiknock value accounts for all of the decline in the yield of straightrun which in 1929 reached 24.8 per cent of the crude and in the five months this year has been only 22.9 per cent.

Accompanying this decline in the yield of straightrun has come the lesser need for natural gasoline as a blending material. Added to this factor has been the large increase in the yield of light fractions at refineries because of the use of reforming units.

However, a reversal of these trends are likely to be seen over the immediate future as the result of refiners adopting the use of ethyl fluid to build up octane value for their regular grades of gasoline. Important refiners who have installed reforming units are converting them into ordinary cracking units and whereas much of the straightrun gasoline was cut at 350 to 375 endpoint to gain octane value, this straightrun material is now being made into a 400 to 410 endpoint product. These changes first came into practice in June for the earliest the Ethyl Gasoline Corp. permitted the sale of the Q brand of ethylized gasoline was May 27.

Since then the following refiners and jobbers have been granted contracts to market this second grade of ethylized gasoline; Standard Oil Co. of New Jersey, its subsidiaries, the Colonial Beacon Oil Co., Standard Oil Co. of Pennsylvania, Standard Oil Co. of Louisiana, and the Humble Oil & Refining Co., Standard Oil Co. of New York and its affiliated companies, namely, the Vacuum Oil Co., Inc., Wadhams Oil Co., Lubrite Refining Co., White Eagle Oil Corp., White Star Refining Co., and Magnolia Petroleum Co.; Standard Oil Co. of Ohio and affiliated jobbing companies, namely, the Fleet-Wing Corp., and the Refiners Oil Corp.; Ashland Refining Co., Barnsdall Refining Co., Eason Oil Co., Freedom Oil Works, Johnson Oil Refining Co., Kanotex Refining Co., Louisiana Oil Refining Corp., Mid-Continent Petroleum Corp., Marathon Oil Co., Pennsylvania Refining Co., Pennzoil Co., Phillips Petroleum Co., Pure Oil Co., Richfield Oil Co. of New York, Root Refining Co., Inc., Skelly Oil Co., Tide Water Oil Co., Tri-State Refining Co., Continental Oil Co., Continental Refining Co., Crystal Oil Refining Co., Globe Oil & Refining Co., Kendall Refining Co., Lion Oil Refining Co., Oil Creek Refining Co., Producers & Refiners Corp., Spartan Oil Co. and Standard Oil Co. of Indiana, with its subsidiary, the Pan American Petroleum Co.

It is impossible to state to what extent these companies will influence the return to higher yields of gasoline from crude through the use of ethyl fluid but the list is impressive and will probably be added to as time goes on. The expected result will probably be the need for less crude.

It is assumed that as these changes come into operation, the position of natural gasoline will be greatly improved because of the need to add volatility to the heavier straightrun and cracked gasolines and because less light fractions will be made at the refinery.

Changes by Areas

In those refining areas in which there is a relatively high production of natural gasoline the consumption of natural gasoline has increased over last year while in those far removed from the producing fields the use of natural has been curtailed. The added cost of hauling has become such a large factor in proportion to the market for the finished motor fuel that the use of natural has been reduced to almost a negligible factor along the East Coast and represents only 1.4 per cent of the motor fuel used in the Appalachian area and 2.5 per cent in the Indiana-Illinois plants. The large reduction in the volume of natural gasoline consumed along the Gulf Coast, namely, from 4.6 per cent of the total motor fuel made in the first five months of 1932 to 3.5 per cent in the same period this year is a further indication that freight costs are seriously affecting its use.

California, the area in which more natural is used in the motor fuel than any other, shows a marked reduction in the percentage of straightrun gasoline produced this year compared to last year.

Under normal conditions this would tend to have reduced the percentage of natural used, but contrary to this, the percentage of natural was increased 2 per cent and equalized the loss in the volume of straightrun produced. In this case, the larger volume of natural was used because it had to be produced in the field along with the crude and it had to find an outlet.

FIRST FIVE MONTHS OF 1933

	Straightrun Bbls.	%	Cracked Bbls.	%	Natural Bbls.	%	Total (bbls.)
Oklahoma, Kansas, Missouri	10,250,000	50.0	8,459,000	41.2	1,805,000	8.8	20,514,000
Inland Texas	7,594,000	63.1	3,151,000	26.2	1,284,000	10.7	12,029,000
North Louisiana, Arkansas	1,712,000	51.6	1,434,000	43.2	175,000	5.2	3,321,000
Texas Gulf Coast	12,586,000	44.4	14,668,000	52.1	1,022,000	3.5	28,276,000
Louisiana Gulf Coast	3,747,000	47.8	3,996,000	50.2	110,000	2.0	5,755,000
East Coast	12,619,000	46.5	14,367,000	52.6	235,000	.9	27,221,000
Appalachian	2,930,000	46.1	3,405,000	52.5	88,000	1.4	6,474,000
Indiana and Illinois	10,280,000	41.4	12,901,000	56.1	620,000	2.5	24,801,000
Rocky Mountains	1,564,000	47.8	1,353,000	41.4	355,000	10.8	3,272,000
California	14,868,000	60.3	6,005,000	24.4	3,767,000	15.3	24,630,000
Total United States	77,200,000	49.5	69,841,000	44.5	9,452,000	6.0	156,293,000

FIRST FIVE MONTHS OF 1932

	Straightrun Bbls.	%	Cracked Bbls.	%	Natural Bbls.	%	Total (bbls.)
Oklahoma, Kansas, Missouri	11,564,000	54.6	8,098,000	37.6	1,794,000	8.4	21,456,000
Inland Texas	6,389,000	58.0	3,544,000	32.0	1,111,000	10.0	11,044,000
North Louisiana, Arkansas	1,788,000	51.6	1,313,000	37.8	369,000	10.6	3,470,000
Texas Gulf Coast	13,139,000	46.0	14,109,000	49.4	1,351,000	4.6	28,599,000
Louisiana Gulf Coast	3,747,000	50.2	3,296,000	44.1	422,000	5.7	7,465,000
East Coast	13,276,000	46.4	14,951,000	52.3	315,000	1.4	28,542,000
Appalachian	3,748,000	51.0	3,449,000	47.1	139,000	1.9	7,336,000
Indiana and Illinois	11,600,000	45.5	13,160,000	51.7	732,000	2.8	25,492,000
Rocky Mountains	1,622,000	45.2	1,604,000	44.8	374,000	10.2	3,600,000
California	17,539,000	62.4	6,833,000	24.4	3,719,000	13.2	28,141,000
Total United States	84,412,000	51.2	70,407,000	42.6	10,326,000	6.2	165,145,000

PERCENTAGE OF GASOLINE BLENDED BASED ON CRUDE OIL REFINED

	Straightrun gasoline output	Cracked gasoline output	Total straightrun and cracked	Natural gasoline used	Total yield per barrel of crude
1918	22.7	2.6	25.3	0.8	26.1
1919	22.5	2.8	25.3	0.8	26.1
1920	22.6	3.5	26.1	0.7	26.8
1921	22.6	4.5	27.1	0.6	27.7
1922	22.8	6.9	29.8	0.7	29.5
1923	24.0	6.0	30.0	1.0	31.0
1924	25.0	6.2	31.2	1.9	33.1
1925	22.1	9.3	32.4	2.7	35.1
1926	22.9	12.0	34.9	3.6	38.5
1927	23.8	13.2	36.0	3.9	39.9
1928	24.0	13.4	37.4	3.9	41.3
1929	24.8	14.5	39.3	4.7	44.0
1930	24.2	17.7	41.9	4.7	46.6
1931	24.6	19.7	44.3	3.9	48.2
1932	25.5	20.5	46.7	3.2	47.9
First five months 1933	22.9	20.7	43.6	2.8	46.4

MILLER IN WASHINGTON

Ray Miller, secretary of the Natural Gasoline Association of America, is representing the natural gasoline industry at the various meetings in Washington for the purpose of formulating a code for the entire oil industry.

Data has been secured in the matter of working hours and pay of plant operators under present conditions as a guide.

These factors form a very important part of the oil code as requested by the Federal Government and because of the continuous operation of gasoline plants, their large numbers and low prices paid for their products, the industry is faced with a complicated problem.

The oil advisory board includes several members whose companies have natural gasoline properties so the gasoline industry will have ample representation. Mr. Miller expects to remain in Washington until about August 1.

Coring Should Be a Part of Regular Production Practice and Not Be Viewed as a Luxury

It has been estimated that 21 years is the average life of wells completed since 1910. Many operators in the East Texas Field estimate that their wells will be producing in 1945, or 12 years hence. These conditions indicate that modern wells have a relatively long life and complete records should be compiled at the time the wells are finished to be available to the men who will operate them during their producing life.

Applying good common sense engineering practice to drilling and producing and using modern equipment will give many records of great importance to the operator at any period of a well's life. As the well is drilled cores should be taken frequently, especially when the producing horizon is reached, for it is from this section of the hole that the oil and gas are to come.

The usual practice now, with few exceptions, is to think of coring only in wildcat or semiwildcat territory. When active development of a field begins, the haste to put the well on production leads the operators to rush completion without resorting to proper coring, or where coring is done it is more often than not a half-hearted, haphazard affair. This practice may have its advantages in getting the flush production from the pool, but later in the life of the well there are many things that the production man would like to know that the generalized well log does not tell him.

When the Oklahoma City Field was drilled the first well was cored consistently and an excellent log of all formations penetrated was compiled. Some later wells were cored, but relatively few were cored into the producing formation.

R. W. Brauchli, in an article, "Coring in the Oklahoma City Field," published in The Oil and Gas Journal on June 1, states that a total of about 18,000 feet, or 0.3 per cent of the total footage drilled before February, 1932, had been cored and about 80 per cent of the cores taken were in the Simpson formation at a depth below 6,000 feet. The average length of the cores recovered is given as 10 feet, whereas it is estimated that the average penetration of the hole into the Wilcox sand is about 120 feet.

This would indicate that even though the amount of coring done in the Oklahoma City Field was relatively great, the actual recovery of core is low and the resulting knowledge of the stratigraphy of the producing formation is meager.

While some coring of the producing formation was done in the East Texas Field the total amount of knowledge of stratigraphy of the producing formations in wells there is also small. The great majority of East Texas wells were simply drilled into production a sufficient distance to make a well without any detailed knowledge being gained of the character of the producing sands.

Core Data Essential

The coring practice, or lack of it, carried on in these two fields is now cited as typical of completion methods because both of these fields have now reached that stage where they are passing from natural flowing to mechanical production methods. In Oklahoma City tubing is being run in many Wilcox wells and in East Texas the wells are rapidly going on the pump or some other mechanical method of lifting the remaining oil.

In Oklahoma City many problems now confronting the petroleum engineer cannot be definitely decided from existing well records. The penetration of the hole into the production formation is known but the character of that section of the hole is for the most part unknown.

In a large part of the Wilcox zone a gas cap has developed. The thickness of this gas cap can only be estimated. The partings in the formation are not definitely logged and while they are assumed to exist the lack of definite record of their relative position and thickness or character is now proving a handicap to the production man in shutting off this upper gas zone.

Recently a well was completed with cable tools and it was found that the upper 30 feet of the Wilcox formation contained gas only. There is from 6 to 10 feet of good oil sand immediately below this gas cap and then shale partings with other oil-saturated sands lower in the hole. While this well was not cored its bottom hole record will prove of much aid to the production department in the future.

Coring Costs

The industry generally has regarded the coring of a formation as something of a luxury and only to be indulged in on wildcat wells or under special conditions in holes drilled in proven territory. The value of getting an accurate sample of the producing horizon has never been fully recognized by the operators, but in the Bradford Field of Pennsylvania it has been found that coring was necessary in obtaining data upon which to base water flooding operations now being generally practiced in that district.

This idea of coring being a luxury is erroneous and the other objection made to coring, that is, mechanical difficulties, is likewise not supported by modern coring practice. Manufacturers provide reliable core barrels for either rotary or cable tools and if properly selected and used these tools give results that justify their extensive use.

That the core must be of small diameter is one of the objections that has been raised by many in considering the practice of coring the producing formation. It is good practice to have a full size hole into the pay zone and many think this cannot be accomplished if the hole is cored without much added expense and risk of reaming after the core has been obtained.

Again the idea is not based upon modern coring practice for the manufacturers heard this objection so frequently that they developed a core barrel that will drill a full diameter hole and take a large core and do this regardless of the depth of the hole.

To illustrate what is being done in coring, one or two examples are cited. In the Los Angeles Basin the record of one company shows that 73 cores have been taken in a 12¼-inch hole with a record of 90.4 per cent recovery. The modern core barrel not only obtained good samples, but it was found that the cost of coring was little more than the cost of drilling the hole in the usual manner.

In another California well located in the Lost Hills Field in the San Joaquin Valley a core was taken with a core barrel made of 13⅜-inch O.D. Grade D pipe for the outer barrel and the inner core tube made from 9-inch O.D. pipe. The bits supplied for the original work were 19⅞-inch diameter and practically 100 per cent cores were recovered on nearly every run.

Cable Tool Coring

Coring need not be limited to rotary outfits, for good core barrels are now available for cable tools and they have been in use since May, 1926, in all parts of the world. As already mentioned, it is essential that cores be obtained in the Bradford Field for the planning of the water flooding work. All the drilling in that field is done by cable tools and the cable tool core barrel is now used so commonly there that it is considered a regular piece of equipment on the rig.

A number of articles have been pub-

Shell Petroleum Corp. Has Active Group of Men in the East Texas Fields

Top row, left to right: J. C. Well, district foreman; Geo. C. Jackson, production foreman; J. C. Ward, engineer; J. M. McQuirie, senior engineer; W. A. Williams, storehouse clerk; Wm. Belding, storehouse clerk; Fred Fleener, chainman, engineering department; J. T. Powell, production clerk; R. L. Hudspeth, surveyor; C. P. Bristol, engineer. Second row: W. C. Wester, payroll clerk; E. M. Allen, district clerk; L. T. Huskey, storekeeper; W. H. Harris, general clerk; J. E. Jones, automotive clerk; C. H. Wingate, draftsman; O. D. Hutto, general clerk; Richard B. Rogers, garage helper. Between 2nd. and 3rd. rows: Gilbert F. McNair, royalty gauger; Glenn S. Irwin, scout; T. C. Backer, construction foreman. Third row: R. D. Risser, assistant production manager, Texas-Gulf area; L. A. Goodman, garage mechanic; H. E. Williams, garage helper; A. A. Cline, garage mechanic; C. A. Morgan, truck driver; Read Galentine, truck driver; A. S. Gardenhire, truck foreman; G. J. Pribble, garage foreman. Fourth row: Jimmie Hickman, garage mechanic; Ira D. Watrous, garage mechanic; Raymond L. Walsh, machinist; Ben H. Kincaid, welder; Chet E. Goddard, electrician; J. B. King, gas engineering repairman; Chas. H. Kruemcke, welder; Wain C. Tackett, machine shop foreman, all of Shell Petroleum Corp., Kilgore, Texas.

lished on the flooding operations of that district and analyses of the formation given in great detail. This type of work would not have been made possible without the cable tool core barrel. It has told the whole story about the conditions underground and has permitted a satisfactory method to be devised for increasing the recovery from that field by about 200 per cent.

While a great deal more might be said about the technique of coring and the types of core barrels available described in detail it is not the main purpose of this article to discuss this phase of the subject. It can be stated that there are no real mechanical problems that cannot be successfully solved by the proper selection of a modern core barrel, either for rotary or cable tool work. The cost of the work is not excessive and in many instances it has been proven that coring has actually cost less than straight drilling.

Value of Coring

The idea that it is desired to emphasize here is the economic value of coring into the producing formations. As stated in the opening paragraphs modern production methods permit getting a great deal of essential data about the formations penetrated by the drill. Bottom hole pressures and samples can be obtained. From these data many of the production problems can be attacked with definite knowledge of underground conditions. Analysis of bottom hole samples is being developed to the point where valuable information is obtained and the work of engineers for the U. S. Bureau of Mines and others is adding much to the knowledge of formation conditions.

The Bradford Field in Pennsylvania is about 58 years old. If the technique now available to the operator had been developed at the time that field was completed it would have resulted in a great saving of money to the present generation of producers in that area. The records left by the original producers are meager and it is now necessary to supplement them by the application of modern methods. Coring and sand analysis were absolutely essential before the water flooding methods could be successfully applied to that field.

It is therefore apparent that the present day operators should apply these modern methods to their new wells and build up for the men who will produce these wells in the future complete records as well as obtain for themselves the many advantages that will accrue from proper application of this knowledge to their present production problems.

An executive will approve the drilling of a well at the cost of more than $100,000 and when it is completed will not have available any definite records of the formation conditions of the producing horizon. For a small additional cost, and in many cases without any additional costs, the coring records could be obtained and the sand analyzed. This type of information would place in the hands of the production department valuable data from which the operators could definitely decide upon production methods best suited to the particular well.

A generalized log of the formation is not sufficient. It is now well known that the stratigraphy of the producing formation will vary from well to well sufficiently to make adjacent well records of little real value when applied to the uncored well. Nature did not follow any uniform practice in sorting sediments that go to make up the producing formations. To hazard the guess that the formation is uniform even for a short distance is sometimes costly and when accurate knowledge can be obtained at relatively low cost it is much better to get it when the well is completed than attempt to arrive at definite conclusions later.

Once the hole has actually been drilled into the producing formation it is difficult to go back into the well and get the type of evidence that might have been obtained as the hole was drilled. Rotary completions do not leave good records even with the best of sampling. No discredit is placed upon the geologist or paleontologist who examines the samples, for he is doing the best he can with the material at hand, but after the formation has been ground up with the bit it is difficult for anyone to reconstruct its original condition by the examination of cuttings.

If the general value of good coring is granted and the remaining objections are costs and mechanical equipment, these too can be overcome if the practice of coring is adopted more generally by the operators.

Under present practice the drilling contractor is required to deliver to the operator owning the well suitable samples. If coring is required there is generally an extra charge made for this special work. In many cases this work is sublet to firms making a specialty of obtaining cores but this also is an added expense.

This cost is based largely upon the volume of work done. If the volume were increased the companies specializing in the manufacture of core barrels and the taking of cores could reduce the cost of the work and the operators would benefit accordingly.

With a large volume of business the core barrel manufacturer could afford to develop equipment suited to every condition and with the practical experience gained by the drillers in this kind of work much of the hazard would be removed.

The basic principle underlying this business of getting cores from drilled holes is much the same as that governing any business. If practiced by a few only it becomes something of a luxury to be indulged in on rare or special occasions.

If the executives of the industry will recognize that they can benefit materially by the proper coring of all their wells as completed the value of these data will become apparent and the operating company will ultimately be repaid many times the cost of coring by lowered production costs and higher recoveries.

Should Adopt Modern Methods

The old practice of getting production as quickly as possible after the well started may have been based upon good economics in the past, but with new fields harder to find and the future supply of oil decreasing it will behoove the industry to apply modern methods to the future exploratory and drilling practices.

The geologist and petroleum engineer recognize the economic value of good cores. The information that can be obtained from a study of them can be applied in many practical ways in getting the production. The main difficulty lies in breaking down established practices of letting drilling contracts and considering the drilling of the well as a thing apart from the production of it after completion.

The two operations are inseparable. If the well is justified a complete knowledge of the underground conditions at the point where it is completed is essential. The means are at hand to get these data and it remains for the executive and well owner to authorize the various departments invilved in drilling and producing the well to apply them.

From all data now available it seems that future returns are more to be considered than those to be obtained immediately after the well is finished. Before the rate of well production was limited by demand for the oil it was common practice to complete a well and then flow it wide open until enough oil had been obtained to return the initial investment with profit. The rest of the oil recovered was considered additional profit.

When the drilling operations were being carried on with small working capital it is possible that a quick return of the money invested in drilling was imperative. This possibility is now largely eliminated by the restrictions placed upon the rate of production allowed the new wells. It follows that every effort should be made to insure a steady profit by getting full knowledge of underground conditions to permit of low production costs during the entire life of the well.

Coring of the formation from which the production is obtained is one of the essentials in getting this type of information. Along with it bottom hole pressure readings, bottom hole sampling, bore hole surveying and a complete analysis of these data are also essential.

Exports and Imports of Refined Products

(Continued from Page 26)

average of 159,286 bbls. for the previous week, and a daily average of 124,321 bbls. for the four weeks ended July 15. Details follow:

(Barrels of 42 gallons)

At Atlantic Coast ports—	
Baltimore	175,000
New York	772,000
Philadelphia	70,000
Others	60,000
Total	1,077,000
Daily average	153,857

There were no imports at Gulf Coast ports during the week.

The week's receipts of foreign oil comprised 689,000 bbls. of crude oil and 388,000 bbls. of fuel oil.

Petroleum Exports

The following table shows exports of refined petroleum products reported from New York during the three weeks ended July 15 (all figures in gallons unless otherwise noted):

	Week ended		
	July 15	July 8	July 1
Gasoline	12,000	28,000	90,000
Naphtha	.....	595,000	4,000
Kerosene	3,000	268,000	15,000
Fuel and gas oil	.....	26,000	5,000
Lub. oil	525,000	1,270,000	661,000
Pet., refined	25,000	128,000	128,000
	Pounds		
Petrolatum	.....	6,000	13,000
Paraffin wax	1,270,000	1,775,000	1,500,000
Refined	277,000	278,000	.....
Scale	90,000	50,000	185,000
Lub. grease	570,000	661,000	475,000

California Oil Receipts

Receipts of California refined oil at Atlantic Coast ports during the week ended July 15 (there were no receipts of California oil at Gulf Coast ports during the period) totaled 147,000 bbls., a daily average of 21,000 bbls., compared with 748,000 bbls., a daily average of 106,857 bbls., for the previous week and a daily average of 37,321 bbls. for the four weeks ended July 15.

The week's receipts consisted of 74,000 bbls. of gasoline and 73,000 bbls. of fuel oil, cargoes being landed at the following ports: New York, 74,000 bbls.; Philadelphia, 51,000 bbls.; other Atlantic Coast ports, 22,000 bbls.

Best Equipment Will Be Necessary in East Texas

(Continued from Page 16)

for any special type pump for any plunger and string of rods will suffice to stir up the fluid column and natural reservoir pressure will do the rest.

The second stage will be when oil only is lifted and the reservoir pressure has dropped to that point where little or no energy is available from the producing formation to assist in delivering the fluid to the surface. It is at this point in the well's life that higher efficiency can be considered and pumps designed to obtain it installed.

The third stage will be after the wells are making both oil and water. Some operators believe that then the flow of water into the hole will create high fluid levels and the pumping duty will be correspondingly light. In their opinion the wells will produce their allowable if agitated and light lifting power is used to assist in delivering the fluid to the surface.

During the last stage of pumping it seems desirable to maintain as low a fluid level in the well as possible. This is beneficial to the whole area and can be best accomplished if more or less uniform type of equipment is used in all wells. This does not mean that all wells will have uniform capacities to produce either oil or water but there will be certain limits that can be ascertained within which the most efficient conditions of production will be found to exist.

Considered from the viewpoint of maximum ultimate recovery from this pool uniform practice should be developed early in its pumping life and this can be best accomplished by co-operation between operators and the use of equipment in the wells that will give the desired results for the area.

Operators acting in a manner contrary to their neighbors can gain a temporary advantage but only at the cost of general efficiency in the area. It therefore seems that co-operation in general pumping practice will be necessary and can best be enforced by the adaption of suitable rules issued by the authorities in charge of operating conditions in East Texas Field.

Company Installs Central Power Generating Plants

(Continued from Page 14)

bbls. This is based upon records from the Balcones fault area fields and it may not hold true of East Texas wells. The disposal of this water is still an unsettled problem and it is one that will probably be left open until it is known how much salt water must be handled to secure the allowable oil.

Some operators anticipate that for some time to come East Texas pumping wells will be limited as to their daily production rate and later it is probable that they will still continue to be limited because of natural conditions.

In Powell, Mexia and Wortham Fields the Railroad Commission of Texas imposed rules requiring that all working barrels should be set at the bottom of the well and all fluid coming to the well handled. What ruling will be made for East Texas is not known at this time. If this matter is left open many operators will set the working barrel high in the hole and endeavor to secure their oil by skimming.

Skimming has already been tried in some wells along the west edge, it is reported, but as much as 85 per cent water has been pumped to secure the daily oil allowable. The exact circumstances under which these wells were operated is not known but it has been reported that such wells secured their fluid with the use of only about 5-horsepower units which would seem to indicate that the wells practically flowed this water and oil.

In general wells on the west side will be equipped with the standard rig units with 40-horsepower Cooper-Bessemer gas engines at one well and handling two other wells with back-side crank units. The Lufkin pumping units are also gas engine powered and suitable for heavy duty and many of these units are also provided with special drawworks for pulling rods and tubing and a few of them with special light rotary turntables that can be used for cleanout work.

The Sullivan pneumatic pumping cylinders installed at five wells have already been described in special articles in The Oil and Gas Journal and they were selected for jointly owned properties.

On another jointly owned lease the seven well geared power is being installed, and as this is an east side lease this is following quite general practice for wells in that general area.

The 15 miscellaneous pumping units are installed at isolated wells where it is not convenient for one reason or another to hook up any of the other systems. Furthermore many of these wells are now making considerable water and it is possible that some of them may be abandoned reasonably soon.

On the whole the particular thing of interest in this company's setup is the use of central electric generating plants in the place of central powers. Based upon an assumed pumping life of 12 years it has been estimated that the central plant will pay out nicely and still be in good operating condition during the last few pumping years of the wells. Those who have selected central power plants have also made the same sort of estimates and have installed their plants for practically the same length of service.

STANDARD OF OHIO ELECTION

The Standard Oil Co. of Ohio has elected the following officers: L. S. Bale, vice president in charge of refining operations; W. J. Semple, treasurer, and A. A. Stambaugh, general salesmanager.

Standard Louisiana Given Bunker Fuel Oil Contract

NEW YORK, July 24.—Standard Oil Co. of Louisiana has been awarded an order for 100,000 bbls. of bunker "C" oil, at 75 cents per barrel, for delivery to the U. S. Engineer at New Orleans, La. The company also received an order for 170,000 bbls. of Diesel oil, same delivery, at $1.65 a barrel.

For delivery to the U. S. Engineer at Savannah, Ga., Atlantic Refining Co. has been awarded an order for Diesel oil to the amount of $9,562, and Gulf Refining $5,250.

Other government oil orders recently awarded include the following: Tide Water Oil Co., 250,000 gallons of bunker "B" fuel oil at 2.02 cents, f.o.b. Bayonne, for delivery to Lighthouse Bureau, Staten Island, New York. Texas Co., 5,000 bbls. of fuel oil, $5,400, delivery to Lighthouse Bureau at San Juan, Porto Rico. Gulf Refining Co., 500,000 gallons of fuel oil at 4¼ cents, delivery to U. S. Engineer at Philadelphia, Pa. Withers & Wellford, Memphis, Tenn., 20,000 bbls. of fuel oil, at $7,200, delivery to U. S. Engineer at Memphis, Tenn. Texas Co., 12,000 bbls. of fuel oil, at 75 cents a barrel, delivery to U. S. Engineer, at Mobile, Ala. Paramount Petroleum Co., Kansas City, 20,000 bbls. of fuel oil at 44 cents a barrel, and 4,000 bbls., same price, both f.o.b. Coffeyville, Kans., delivery to U. S. Engineer at St. Louis, Mo.

The Army Quartermaster, Brooklyn, N. Y., has placed the following orders: Standard Oil Co. of New Jersey, 8,000 gallons gasoline, 12.8 cents per gallon; 8,000 gallons gasoline, 12.1 cents; 7,400 gallons gasoline, 11.6 cents; 8,000 gallons gasoline, 11.6 cents; 7,400 gallons gasoline, 12.4 cents; 7,400 gallons gasoline 8.4 cents; 7,400 gallons gasoline 9.2 cents; 7,400 gallons gasoline 12.2 cents; 8,000 gallons gasoline 9.2 cents; and 8,000 gallons gasoline, 12.2 cents. Standard Oil Co. of New York: 7,400 gallons gasoline at 12.7 cents; 8,000 gallons at 9.41 cents; 8,000 gallons at 12.1 cents; 8,000 gallons at 10.62 cents; 8,000 gallons at 13 cents; 8,000 gallons at 10.07 cents; 8,000 gallons at 10.29 cents; 8,000 gallons at 12.7 cents; 8,000 gallons at 10.24 cents; and 8,000 gallons at 10.24 cents. Standard Oil Co. of New Jersey has received an order from the U. S. Engineer at Norfolk for 14,000 gallons of gasoline in drums at 8.4 cents; 10,000 gallons in tank wagons at 8.4 cents; and 400 gallons of kerosene in tank wagons at 8 cents.

Crystal Oil Refining Co. of Shreveport, La., has received an order for 8,000 gallons of kerosene at 4.89 cents, 1 per cent, delivery to U. S. Engineer at Florence, Ala. Standard Oil Co. of Pennsylvania has received an order from the Frankford Arsenal, Pa., for 3,000 gallons of mineral lard oil at 24 cents per gallon, 2 per cent. Standard Oil Co. of Kentucky has been awarded an order by the Army Quartermaster at Brooklyn for 12,000 gallons of laundry solvent at 3⅝ cents per gallon. Standard Oil Co. (Indiana) has been awarded an order for 3,000 gallons of petroleum solvent at 11 cents a gallon for the Rock Island Arsenal.

The Army Quartermaster, Fort Sam Houston, has awarded Magnolia Petroleum Co. an order for 8,000 gallons of road oil at 9 cents per gallon.

WHALE OIL LUBRICANT

A Japanese scientist claims to have patented a process to manufacture lubricating oil from whale oil at an announced cost of about $1.50 a gallon at current exchange, according to a report to the Commerce Department from Assistant Trade Commissioner Howard B. Titus, Tokyo. The scientist claims that the lubricating oil thus obtained gives better lubrication from a smaller quantity of gram oil than of mineral oil. He also stated that the flashpoint is higher and the freezing point lower than in the case of mineral oils.

Crude Oil Prices

(Continued from Page 23)

Duval County (June 22, 1933) 4*
Saxet (June 19, 1933) ..... .45

Note—Effective July 7, Magnolia Petroleum Co., 55 cents in Darst Creek and Mirando; Darst Creek, Gulf Pipe Line Co. and Humble Oil & Refining Co., 40 cents; effective June 22, Texas Co., Magnolia Petroleum Co., 40 cents; Mirando, Magnolia Petroleum Co., 35 cents; Humble Oil & Refining Co., 40 cents. Pettus and Salt Flat by Humble and Gulf companies; Luling and Lytton Springs, by Magnolia Petroleum Co. Duval and Saxet, by Texas Co.

North Louisiana and Arkansas

Smackover, Ark. (all grades).....See note
Urania, La. (Jan. 26, 1933).....$ .25
East El Dorado, Ark. (June 19, 1933)..
.....See note
Other fields.....See gravity table

Note — Smackover, all grades, effective June 19 by Texas Co., 30 cents; June 19, Standard Oil Co. of Louisiana, 30 cents; June 20, Magnolia Petroleum Co., 30 cents; Gulf Refining Co., 30 cents; Louisiana Oil Refining Corp., 30 cents. Urania Field posted by Louisiana Oil Refining Co. and H. L. Hunt, Inc., East El Dorado, effective June 20, Magnolia Petroleum Co., 30 cents; Gulf Refining Co., 30 cents; Phil Tex Oil Co., effective June 19, posted 30 cents for all grades in Union and Ouachita Counties, Ark.

Eastern States

SOUTH PENN OIL CO.
(Effective July 17, 1933)

Pennsylvania Grade Oil in National Transit Lines (Bradford Field) $1.85
Pennsylvania Grade Oil in Southwest Pennsylvania Lines 1.52
Penna Grade Oil in Eureka Pipe Line Lines 1.47
Penna Grade Oil in Buckeye Pipe Line Lines 1.32
Corning Grade Oil in Buckeye Pipe Line Co.'s lines (July 18, 1933) ..... .90

TIDE WATER PIPE CO.
(Effective July 17, 1933)

Bradford, Pa. $1.85
Allegany, N. Y. 1.85

PURE OIL CO.
(Effective July 18, 1933)

Cabin Creek, W. Va. $1.47
Bradford Hollow, W. Va. 1.47

PENNZOIL CO.
(Effective July 17, 1933)

Pennsylvania Grade Oil in National Transit Lines:
Group A $1.77
Includes Cochran, Franklin, Hamilton and Doolittle districts.
Group B 1.76
Includes Titusville district.
Group C 1.75
Includes Turkey and Tidioute districts.
Group D 1.74
Includes Bear Creek and Porkey districts.
Group E 1.64
Includes Eldenau, Bull Creek, Rough Run, Carbon, Dipner, Bredin, McJunkin, Jameson, Kennerdell, Emlenton, Tiona, Lacy and Kinzua districts.
Price depends on length of pipe line haul to plant at Oil City.

Rocky Mountain States

Iles, light (July 8, 1933) ..... $.50
Iles, heavy (July 8, 1933) ..... .44
Florence, Colo. (June 17, 1933) ..... .90
Fort Collins and Wellington, Colo. (June 17).....(See Salt Creek prices)
Cat Creek, Mont. (June 17, 1933)..... .62
Big Muddy (July 8, 1933)† ..... .55
Frannie, light (July 8, 1933) ..... .41
Frannie, heavy (July 8, 1933) ..... .30
Salt Creek and La Barge (July 8, 1933) .....
See Stanolind Mid-Continent price schedule
Grass Creek, light (July 8, 1933) ..... .72
Grass Creek, heavy (Dec. 15, 1932)..... .45
Elk Basin (July 8, 1933) ..... .73
Rock Creek (July 8, 1933)† ..... .54
Dutton Creek (July 8, 1933).....
.....See Mid-Continent gravity prices.
Lance Creek (Dec. 16, 1932)..... .92
Poison Spider (Mar. 8, 1931)..... .70
Hudson (June 2, 1931)..... .85
Lander (Mar. 8, 1931)..... .40
Rex Lake (Feb. 22, 1930)..... 1.10
Osage (Jan. 18, 1933)..... .53
Lost Soldier (July 8, 1933) ..... .42
Hamilton Dome (Dec. 16, 1932)..... .35
Torchlight (July 8, 1933) ..... .72
Greybull (July 8, 1933) ..... .72
Pondera (June 17, 1933) ..... .76
Sunburst (July 8, 1933) ..... .80
Hogback, N. Mex. (July 8, 1933) ..... .75
Lea County, N. Mex. (See Note) ..... .80
Maljamar (June 19, 1933) ..... .85
Artesia-Jackson (July 11, 1933) ..... .45

Note—Salt Creek, Cat Creek, Dry Creek, Dallas-Derby, Hudson, Greybull, Hogback, and Iles by Stanolind Oil & Gas Co. and remainder by Ohio Oil Co. Both companies posted Grass Creek light and Elk Basin. Lost Soldier posted by Producers & Refiners Corp. Artesia, Jackson and Maljamar posted by Continental Oil Co. Lea County, effective June 19, by all purchasers; Fort Collins, Wellington, Orchard, Florence, Big Muddy, Cat Creek, Rattlesnake and Table Mesa by Continental Oil Co. Osage posted by Arro.
*Continental Oil Co. †Ohio Oil Co.

Middle Western States

OHIO OIL CO.
(Effective July 12, 1933)

Lima ..... $.95
Illinois ..... .90
Princeton, Ind. ..... .90
Plymouth .....Shut in
Western Kentucky ..... .85
Midland, Mich. (July 17, 1933)* ..... .90
Somerset, Ky. (July 14, 1933) ..... .83
Hart County, Ky. (July 7, 1933) 1.00
Muskegon, Mich. (Mar. 27) .....See note

*Posted by Pure Oil Co. Producers Pipe Line Co. pays 5 cents per barrel over Pure Oil Co.'s posted price. Muskegon: All companies pay $1 per barrel effective March 27. Somerset, Ky., crude purchased by Ashland Refining Co., Ashland, Ky., and posted price includes premium. Hart County, Kentucky, crude purchased by Stoll Refining Co.

Canada

Ontario (Jan. 18, 1933):
Petrolia* $1.75
Oil Springs* 1.85
Turner Valley†:
Crude oil, 31°-35.9° (Jan. 24, 1933).... 1.41
Crude oil, 36°-49.9° (Jan. 24, 1933).... 1.90
Crude oil, 50° up (Jan. 24, 1933)..... 2.41
Discolored naphtha (Jan. 24, 1933)... 2.58
Crude naphtha (Jan. 24, 1933)..... 2.83

*Imperial Oil, Ltd. †Imperial Oil, Ltd., and Regal Oil & Refining Co.

Mexico

Panuco* $0.422

*F.o.b. ship, based on June transactions and exclusive of production and export taxes and bar dues.

California Crude Oil Prices

STANDARD OIL CO. OF CALIFORNIA
(Effective June 26, 1933)

For current purchases of crude oil at the well (unless otherwise specified). (All gravities above those quoted take highest price offered in that field.

	Signal Hill	Seal Beach, Alamitos Heights	Huntington Beach	Inglewood	Playa Del Rey*	Olinda-Brea Canyon	Athens, Rosecrans, Domingues	Torrance	Richfield	Whittier, La Habra	Montebello	Coyote Hills	Santa Fe Springs	Midway-Sunset, Elk Hills, Buena Vista Hills	Lost Hills	Coalinga
14-14.9	$0.55	$0.55	$0.55	$0.55	$0.55	$0.55	...	$0.55	$0.55	$0.55	$0.55	$0.55	...	$0.52	$0.52	$0.52
15-15.9	.55	.55	.58	.58	.55	.58	...	.55	.55	.55	.55	.55	...	.52	.52	.52
16-16.9	.55	.55	.60	.61	.58	.61	...	.57	.55	.57	.55	.55	...	.52	.52	.52
17-17.9	.57	.55	.63	.64	.61	.64	...	.60	.59	.60	.55	.57	...	.52	.53	.52
18-18.9	.60	.56	.65	.67	.64	.67	...	.63	.62	.62	.55	.60	...	.52	.56	.52
19-19.9	.63	.60	.68	.70	.67	.69	...	.65	.66	.65	.55	.62	...	.54	.59	.52
20-20.9	.66	.62	.71	.73	.70	.72	...	.68	.69	.68	.55	.65	...	.57	.62	.53
21-21.9	.69	.67	.73	.77	.73	.75	...	.70	.72	.71	.58	.68	$0.60	.61	.65	.56
22-22.9	.71	.70	.76	.80	.76	.77	...	.73	.75	.74	.60	.71	.64	.65	.68	.59
23-23.9	.74	.73	.78	.83	.79	.80	$0.68	.75	.78	.76	.64	.73	.67	.69	.70	.61
24-24.9	.77	.77	.81	.86	.82	.83	.71	.78	.82	.79	.67	.76	.70	.73	.73	.64
25-25.9	.80	.80	.83	...	.85	.85	.75	.80	.85	...	.71	.79	.73	.76	.76	.67
26-26.9	.82	.83	.86	...	.88	.88	.79	.83	.88	...	.75	.82	.76	.80	.79	...
27-27.9	.85	.87	.88	...	...	.91	.82	...	.92	...	...	.84	.80	.82	.81	...
28-28.9	.88	.90	.91	...	...	.94	.86	...	.95	...	...	.87	.83	.87	.84	...
29-29.9	.90	.92	.93	...	...	...	.89	...	.98	...	...	.90	.86	.91	.87	...
30-30.9	.93	.97	.96	...	...	...	.93	...	...	...	...	.93	.89	.95	.89	...
31-31.9	...	...	...	...	...	...	.97	...	...	...	...	.95	.92	.98	...	...
32-32.9	...	...	...	...	...	...	1.00	...	...	...	...	.98	.94	1.02	...	...
33-33.9	...	...	...	...	...	...	...	...	...	...	...	1.01	.99	1.06	...	...
34-34.9	...	...	...	...	...	...	...	...	...	...	...	1.03	1.02	...	...	...
34-35.9	...	...	...	...	...	...	...	...	...	...	...	...	1.05	...	...	...
34-36.9	...	...	...	...	...	...	...	...	...	...	...	...	1.08	...	...	...
37-37.9	...	...	...	...	...	...	...	...	...	...	...	...	1.11	...	...	...
38-38.9	...	...	...	...	...	...	...	...	...	...	...	...	1.14	...	...	...

Elwood—F.o.b. ship, 33-33.9 degrees, 91 cents; 34-34.9, 94 cents; 35-35.9, 97 cents; 36-36.9, $1; 37 degrees and over, $1.03.
Kettleman Hills—33-33.9 degrees, 76 cents; 34-34.9, 78 cents; 35-35.9, 80 cents; 36-36.9, 82 cents; 37-37.9, 84 cents; 38-38.9, 86 cents; 39 degrees and over, 88 cents.
Newhall, McKittrick and Kern River—14 degrees to 19 degrees and over, 52 cents.
Wheeler Ridge—14 to 20.9 degrees, 52 cents; 21-21.9, 55 cents; 22-33.9, 57 cents; 33-33.9, 60 cents; 24-24.9, 63 cents; 25 degrees and over, 66 cents.

The Union Oil Co. met all Standard Oil Co. of California prices in fields where both companies purchase, and posted as follows in East Coyote: 14 to 15.9 degrees, 55 cents; 16-16.9, 57 cents; 17-17.9, 60 cents; 18-18.9, 62 cents; 19-19.9, 65 cents; 20-20.9, 68 cents; 21-21.9, 71 cents; 22-22.9, 74 cents; 23-23.9, 76 cents; 24 degrees and over, 79 cents. Santa Paula, 14 to 18.9 degrees, 56 cents; 19-19.9, 57 cents; 20-20.9, 60 cents; 21-21.9, 62 cents; 22-22.9, 65 cents; 23-23.9, 67 cents; 24-24.9, 70 cents; 25-25.9, 72 cents; 26-26.9, 75 cents; 27-27.9, 77 cents; 28-28.9, 80 cents; 29-29.9, 82 cents; 30 degrees and over, 85 cents. Orcutt, 16 to 18.9 degrees, 52 cents; 19-19.9, 54 cents; 20-20.9, 57 cents; 21-21.9, 61 cents; 22-22.9, 65 cents; 23-23.9, 69 cents; 24-24.9, 72 cents; 25-25.9, 76 cents; 26 degrees and over, 80 cents. Lost Hills and Belridge schedule same as that of the Standard Oil Co. of California in Lost Hills; Mount Poso, Kern River, McKittrick schedule same as Standard's Newhall, McKittrick and Kern River schedule except that Union Oil Co. posts 47 cents for 11 to 13.9 degrees, inclusive. Union Oil Co.'s schedule also posts 47 cents per barrel for 11 to 13.9 gravity in Coalinga, Midway-Sunset, Elk Hills and Buena Vista Hills.

Texas Co. effective June 26, 1933, met Standard Oil Co. of California prices in Signal Hill, Alamitos Heights, Huntington Beach, Torrance, Richfield, Montebello-North Whittier, Santa Fe Springs, and pays following prices in Shiells Canyon, South Mountain and Santa Paula: 14 to 15.9 degrees, 55 cents; 16-16.9, 57 cents; 17-17.9, 60 cents; 18-18.9, 62 cents; 19-19.9, 65 cents; 20-20.9, 68 cents; 21-21.9, 71 cents; 22-22.9, 74 cents; 23-23.9, 76 cents; 24-24.9, 79 cents; 25-25.9, 82 cents; 26-26.9, 85 cents; 27-27.9, 88 cents; 28-28.9, 91 cents; 29-29.9, 94 cents; 30 degrees and over, 97 cents.

Associated Oil Co., effective June 26, 1933, adopted Standard Oil Co. of California's prices with a few reservations in the upper brackets. In Huntington Beach the highest price is 86 cents for 26 degrees and over. In Seal Beach and Alamitos Heights, top price is 83 cents for 26 degrees and over; Coyote Hills, top price is 72 cents for 23 degrees and over. In Richfield, top price is 85 cents for 25 degrees and over; Torrance, top price is 80 cents for 25 degrees and over; Santa Fe Springs, top price is 81.05 for 35 degrees and over; Midway-Sunset, Elk Hills and Buena Vista Hills, top price is 95 cents for 30 degrees and over; the Associated Oil Co. also posts 47 cents per barrel for 11 to 13.9 gravity oil in McKittrick, Kern Front, Kern River, Midway-Sunset, Elk Hills, Buena Vista Hills and Coalinga.

General Petroleum Co., effective June 26, 1933, posted same prices as Standard Oil Co. of California with some reservations in the upper grades in some fields and in lower grades in one field: Midway-Sunset, top price is 95 cents for 30 degrees and over; Alamitos Heights, top price of 83 cents for 26 degrees and over; Santa Fe Springs, bottom price of 70 cents for 24-24.9; Richfield, top price of 84 cents for 25 degrees and over; Brea Canyon, Olinda, top price of 85 cents for 25 degrees and over; Torrance, top price of 80 cents for 25 degrees and over.

Late Fields

OKLAHOMA

The wildcat well near Crescent, in Logan County, Gypsy Oil Co. and Carter Oil Co.'s No. 1 Miller, which was opened for production for 20 hours on July 21 and was then shut in was again opened for a production test on July 25.

Continental Oil Co. and Westhyde Investment Co.'s No. 1 Thompson, NW cor. SW SW, Section 7-24-4w, a wildcat test in Garfield County, was being abandoned at a total depth of 6,580 feet after finding water in the Siliceous lime. This test found the Tonkawa sand at 3,867 feet, Layton sand at 4,388 feet, Mississippi lime at 5,505 feet, Wilcox sand at 6,173-90 feet and the second Wilcox sand at 6,220-68 feet, and the Siliceous lime at 6,470 feet.

Amerada Petroleum Corp.'s No. 1 Mitchell, SE cor. NE SW, Section 15-18-3, a wildcat in Payne County, was still reaming the hole to lower casing to the top of the Siliceous lime, where a showing of oil was found. The test failed to find oil production in the Simpson and Wilcox sands. The showing of oil was in a core and the company has had trouble in underreaming.

Stumpff-McFaull-Horsley's No. 1 Harris, SW cor., Section 14-9-25, McCurtain County wildcat, has resumed drilling operations at a total depth of 2,742 feet, after being shut down for several months. It was shut down in what is believed to be the lower Trinity sand, this sand being fouund about 25 feet under the Red Cap rock at 2,731 feet. Cores will be taken from its present depth to determine the formations. This well is also believed to be the deepest test that has ever been drilled in the southeastern part of Oklahoma.

Oklahoma County, with four wildcat tests under way, is claiming the attention of the industry. The trend of production southwest from the Oklahoma City Field was believed to have been defined when the Phillips Petroleum Co. and others' No. 4 Berg, NW cor. SW Section 26-11-3w, flowed only 686 bbls. of oil in two hours with less than 3,000,000 feet of gas a day, from the Wilcox sand at 6,564-6,635 feet.

H. E. Rapp and others' No. 1 Price, C E half NE SW Section 19-14-3w, is ready to spud. This is about 2 miles north of the Mid-Kansas Oil & Gas Co.'s No. 1 Messer. W. E. Houston's No. 1 Ketchum, C W half NE SE Section 32-14-3w, is a cellar. Midcontinental Co.'s No. 1 Edwards, C SE SE Section 19-11-1, was drilling at 1,050 feet. Frank Russell's No. 1 Highly, SW cor. NW SE Section 29-12-3w, a wildcat northeast of the Oklahoma City Field, was drilling at 3,565 feet.

KANSAS

Clum and others' No. 1 Nelson, NW cor. SE NW Section 12-18-4w, a wildcat test in McPherson County, found the top of the Viola lime at 3,428 feet. An underreaming job may hold up the drilling deeper for several days. As yet no showings of oil or gas have been found.

W. C. McBride, Inc.'s No. 2 Koehn, in Section 33-21-3w, in the Mabee Pool, McPherson County, made 441 bbls. of oil in 19 hours from the Hunton lime.

Producers & Refiners Corp.'s No. 3 Martens, in Section 19-22-3w, in the Hollow Pool, Harvey County, was treated with acid at a total depth of 3,443 feet and swabbed 1,020 bbls. of oil in 17 hours.

Phillips Petroleum Co.'s No. 2 Wiles, NE cor. SE NE Section 25-19-2w, in the Ritz-Canton Pool, in McPherson County, was spudding. It is located in the central part of the field, rotary tools are being used at this location.

The wildcat test of Aldrich and others, No. 1 Stromquist, SW cor. SE SE Section 2-19-3w, McPherson County, was still shut down at 1,045 feet. It is not known when operations will be resumed at this location.

Texas Co.'s No. 5 Mun, NE cor. SE NE Section 12-19-2w, an old chat producer in the south end of the Ritz-Canton Field in McPherson County, was being prepared to deepen. This well is two locations east of a recently completed Viola lime well and it will be watched with interest as it is probable that if a paying well is found in the Viola lime at this location a number of other wells that are now producing from the chat will be drilled deeper, in this area.

The recently completed well of E. F. Jones and others just south of the Chase townsite in Rice County, is the largest Siliceous lime producer yet found in the new pool. It has pumped approximately 26,000 bbls. of oil since it was drilled into the pay the first of July. It has been producing at the rate of 100 bbls. an hour from a total depth of 3,224 feet. The gauge of the well's production was taken from July 4 to 16. Many operators believe that the large production of this pool is south of the townsite. This is evidenced by the new operations that are springing up around the E. F. Jones well.

East Texas Regional Committee Formed With Sam Gladney as Its Chairman

AUSTIN, Tex., July 24.—Organization of its regional committee for East Texas was announced by the Texas Petroleum Council at its Austin headquarters following a meeting in Longview attended by 150 men representing all branches of the oil industry and representatives of the state and Federal governments.

"I am gratified at the splendid co-operation shown by men in the industry in organizing for self regulation of the East Texas Field," Prof. A. W. Walker, Jr., president of the council, said.

Sam Gladney, of Tyler, was elected chairman of the East Texas regional committee and A. F. Dye and W. R. Nicholson vice chairmen, with headquarters in Longview.

The organization is divided into six sections: statistical, antipollution, royalty owners, technical, press and refinery.

The sections of the East Texas regional committee will have the following officers and duties:

Statistical section: N. H. True, chairman; Ed Neathe, vice chairman. This section will obtain: (A) (1) Production statistics; (2) loading rack statistics; (3) transportation statistics; (4) pipe line statistics. (B) Refinery statistics; (1) oil receipts; (2) gasoline and refined products statistics; (3) gasoline tax statistics. (C) Storage statistics; (1) amount of storage facilities; (2) changes in oil in storage; (3) changes in refined products in storage. This section will report in statistics weekly, violations daily, to the regional chairman.

Antipollution section: George Martin, chairman; Swede Sorensen, vice chairman. This section will obtain: (1) Reports on water wells; (2) methods of preventing pollution of streams by salt water, oil or mud; (3) report all violations to regional chairman weekly.

Royalty owners section: W. R. Smith, chairman; Carl Everett and S. S. Laird, vice chairmen. This section will obtain: (1) Reports on overproduction from excess royalty checks and assist antipollution section; (2) report violations weekly to regional chairman.

Technical section: Pat Reagan, chairman; Jimmie Hudnall, vice chairman. This section will obtain: (1) Pressure reports; (2) gas data; (3) assist antipollution section; (4) reports on pressure decline, water encroachment, etc., without reference to allocations or any confidential issue. Reports to be made monthly to regional chairman.

Press section: Carl Estes, chairman; Syril A. Parker, vice chairman. This section will report oil movements and violations reports. It will also advise on conditions as they actually exist and aid in publicizing the work of the council in the district.

Refinery section: Lee Adams, chairman; Joe Mickle, vice chairman. This section will make regular reports on movements of refined products, gas tax evasions, etc.

With the completion of the regional committee the work of the Texas Petroleum council in aiding law enforcement and finding facts with regard to the industry will really get under way, President Walker stated.

PAY INCREASES ANNOUNCED

OIL CITY, Pa., July 24—Announcement has been made of a pay increase of 15 per cent at the Imperial works of the Oil Well Supply Co., a subsidiary of the United States Steel Corp. The increase affects between 600 and 700 employes from the general manager down. Approximately 275 men in the Titusville Iron Works and the Titusville Forge Co., operated by the Struthers-Wells-Titusville Corp., have had their pay increased 10 per cent; the Cyclops Steel Co., Titusville, also announced a 10 per cent increase for 100 men, returning wages to the 1929 level.

TO MINE FOR OIL

PITTSBURG, Kans., July 24.—To mine paving material and oil in a vertical shaft, 100 feet deep, is the plan of Oklahoma City men at what is known as W. E. Hailey shaft No. 1, near Ti, Pittsburg County, in Township 1n-16e. The shaft is down 40 feet. An agreement has been made with the county commissioners to "metal" a stretch of the Savage highway near Weathers with crushed sandstone from this shaft for the purpose of making a test.

FOREIGN GEOLOGISTS ON TOUR

FORT WORTH, Tex., July 22.—A party of famous foreign geologists stopped over at Fort Worth July 15 and were entertained by the Fort Worth Geological Society. The party is on an excursion in connection with the International Geological Congress in Washington July 22 to 29.

Frank R. Clark, president of the American Association of Petroleum Geologists, and W. E. Wrather were acting as guides to the party. From Fort Worth the party entrained to visit the salt mines at Grand Saline, Tex., and the Van Field in Van Zandt County, thence traveling to the Gulf Coast fields.

In the party were: Ramiro-Fabini, Palermo, Italy; Dr. Alfred Bentz, Berlin, Germany; Yoshinosuke Chitani, Imperial Geology Survey of Japan, Tokio; I. M. Goubkine, director of the United Geological and Prospecting Service, U.S.S.R., Moscow; Dr. and Mrs. Louise de Loczy, director of the Geological Survey of Hungary, Budapest; Dr. Tans G. Kugler of the Natural History Museum, Basle, Switzerland; Ezequiel Ordones of Mexico City, and B. P. Nekrasoff of the United Geological and Prospecting Service, U.S.S.R., Moscow.

ENTERS PENNSYLVANIA

NEW YORK, July 24.—Continental Oil Co. and Shell Eastern Petroleum Products, Inc., have received certificates of authority to do business within the State of Pennsylvania. Shell will maintain Philadelphia offices at 123 South Broad Street, and Conoco's headquarters will be at the same address, both located in the Fidelity-Philadelphia Trust Building, Philadelphia.

CHECKING BEHAVIOR OF OILS

Original methods used to check the behavior of various lubricating oils, including some specially processed Pennsylvania grade oils, were described to members of the Pennsylvania Grade Crude Oil Association, at its annual meeting held in State College, Pa. The speaker was Prof. H. A. Everett, head of the mechanical engineering department of the Pennsylvania State College.

Aug. 10 Date for Opening Bids for Sinclair Station

WASHINGTON, D. C., July 24.—Bids for the sale of the Sinclair pump station, located at various points on Naval Petroleum Reserve No. 3, will be opened August 10 in the office of the Inspector Naval Petroleum and Oil Shale Reserves, 315 Federal Building, Casper, Wyo., it was announced by the Navy Department.

The station was constructed in 1923 and operated from May, 1923, to December, 1927. It will be sold complete in one lot as it stands, including the main engine and pump building and equipment, the boiler house and boilers, the heater house and heaters, the manifold house and all valves and fittings, the warehouse, oil house, blacksmith shop, and one water and one oil tank and miscellaneous valves, fittings and piping about the station.

The material is offered by the department "as is," "where is," and "if is," without recourse and must be removed by the original purchaser entirely at his expense.

"Petroleum Register" for 1933 Encyclopedia of Oil

The fifteenth annual edition of the Petroleum Register, an international directory, statistical record and equipment catalog of the oil industry, published by the Petroleum Register Corp., 165 Broadway, New York, has just been issued. The 1933 edition, consisting of 457 pages, supplies financial and detailed information on more than 10,000 oil companies and includes 15,000 names and addresses of personnel.

A special feature of the Petroleum Register, which is a working compendium covering every branch of the oil and allied industries, is the buyers' guide, which includes practically every article in use in the production of crude and refined oil. More than 1,500 products are alphabetically arranged and under each heading are given the names of the various manufacturers.

Other features of this encyclopedia of the oil industry are names and addresses of individuals and companies operating in various fields of the United States; a list of drilling contractors by states; names of companies with pipe lines for transporting crude petroleum; a list of manufacturers of petroleum products refined from crude oil; names of producers of gasoline by absorption or compression processes; a directory of manufacturers of lubricating oils, greases, waxes and petrolatum; also a list of royalty companies.

Also there is a directory, with financial data, of wholesalers of gasoline, kerosene, lubricating, fuel and gas oils, etc.; names and addresses of companies operating in more than 75 foreign countries with full information on managements, finances, properties, plants, equipment and capacity.

The statistical section contains complete tabulated figures, compiled with the co-operation of Federal and state governments, the American Petroleum Institute and various oil associations, on oil production, consumption, imports and exports, refinery output, etc.

Revised maps in the 1933 edition show oil fields of the United States which are now centers of intensive development, such as East Texas, West Texas, Texas Panhandle, the Gulf Coast, and active oil producing territory.

The 1933 Petroleum Register is handled in the Southwest by the Southwestern Bureau, The Petroleum Register, P.O. Box 1821, Tulsa.

MAGNETIC STORM

Tucson, Ariz., observatory of the U. S. Coast and Geodetic Survey reports severe magnetic storm started at 3 a.m. (C.S.T.) on July 23 and ended at 8 a.m. (C.S.T.) on July 24. Its telegram follows: "Storm began twenty-third. Nine. Severe. Ended twenty-four fourteen."

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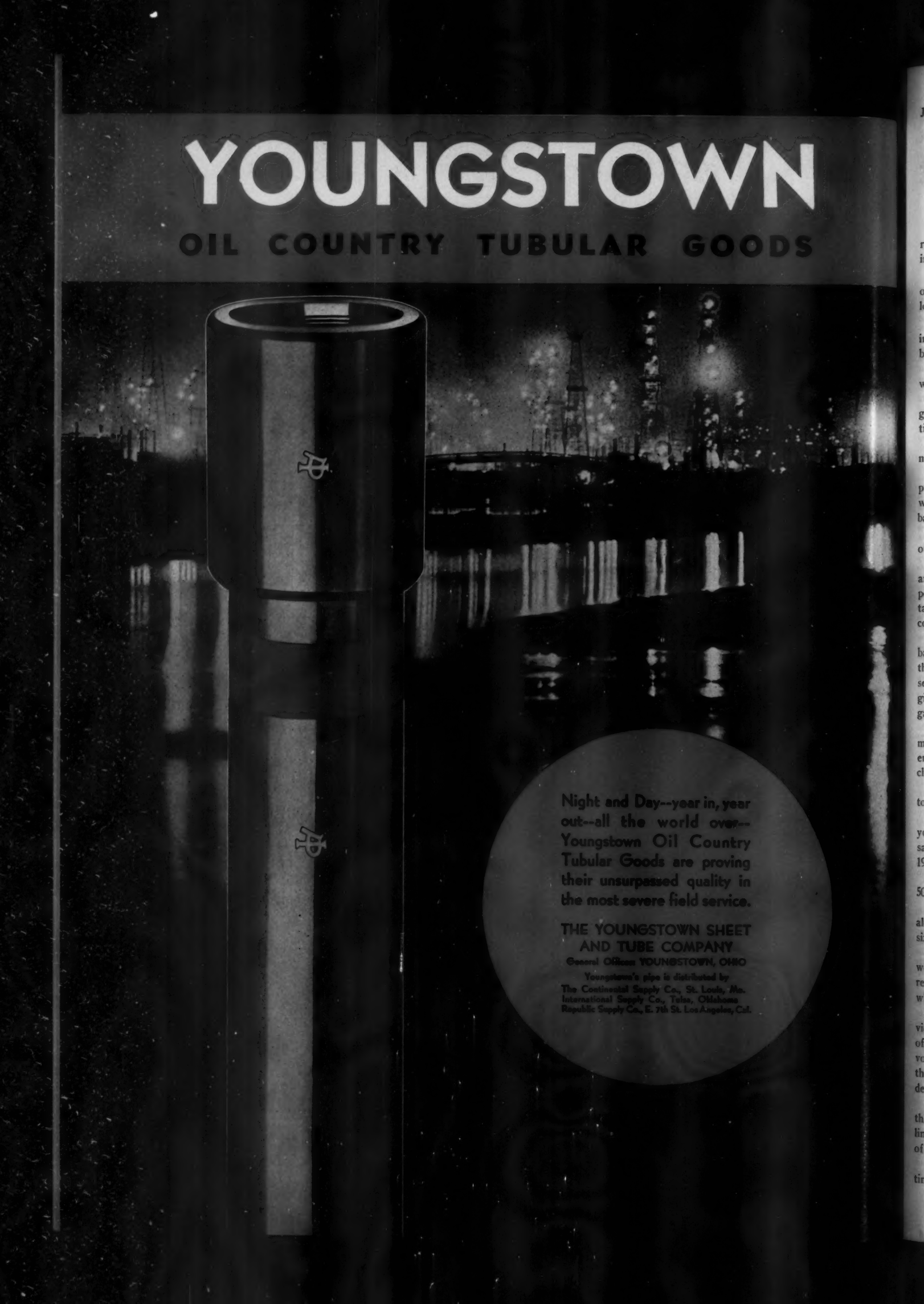

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The Oil Industry on the Verge of a New Era

By W. T. ANDERSON

There is every reason to believe that the first six months of 1933, reviewed in this issue, witnessed the final clean-up period in the oil industry after several years of unsatisfactory operations.

Study of the marketing data in this issue shows clearly why the oil companies and individuals engaged in the oil business suffered losses during the past six months.

Crude oil dropped to prices which were less than the cost of pumping. Most of the refined products sold for prices which would have been considered far too low for crude oil a few years ago.

Perhaps this final drop was necessary before the industry as a whole could be made to realize the failure of its policies in the past.

Prices got so low that even the extreme pessimists saw they could go no lower and the resultant reversal of attitude brought substantial recovery in the markets as the half year drew to a close.

Oil men, however, are not so much interested in the past six months as they are in the present and future.

The industry is on the verge of a new era and its future will depend largely upon the attitude taken by the government. Oil men will insist that the business be placed upon a generally profitable basis.

This means substantially better prices for crude oil and for most of the refined products.

It must not be forgotten that when gasoline prices were lowered and crude prices with them the consumer was not benefited. The politicians quickly took advantage of the situation to add to the taxes. What the oil industry sacrificed was picked up by the tax collector.

Now, when the industry is striving to get back upon a sound basis of operations it will be handicapped by the larger tax. A tax that was not heavily felt by the motorists when the industry was selling gasoline at distress prices due to unfair competition, bootlegging and tax evasion, may be a burden when added to fair prices for gasoline.

If oil is going to be operated as a national industry taxation of its main product should be nationally uniform and at a rate which will encourage and not retard consumption. That rate has been very clearly shown by the decline in consumption in overtaxed states.

Aside from the action of the government the industry has reason to take encouragement from its own stock situation.

It is true that crude oil production in the first six months of the year amounted to 435,000,000 barrels, or 39,000,000 more than in the same period last year and 19,000,000 more than in the like period of 1931.

But this was 33,800,000 less than in the first half of 1930 and 50,000,000 less than the first half of 1929.

This year's increase was more than furnished by East Texas alone which produced nearly 43,000,000 barrels more than in the first six months of a year ago.

Due to this overproduction of crude and the numerous crises that were developed from time to time in the efforts being made to correct that situation many have failed to realize that the industry meanwhile has been placing several rooms of its house in order.

Although this correction is not yet unanimous, many of the individual units have been convinced of the folly of operations in excess of the ready requirements of the industry's customers and through voluntary methods have reduced their production and inventories so that they now occupy a very strong position in regard to supply and demand.

Because of the action of these individual companies the data for the entire industry reflects an important improvement along several lines despite the activities of a few continuing the obsolete practices of the past.

Although crude oil production was uncontrolled for part of the time the total stock of refinable crude on June 1 (the latest available government figure) was 343,583,000 barrels which was a decrease of 25,000,000 barrels from the total on the same date in the previous year.

For the same two periods the refiners reduced their inventories by over 14,000,000 barrels, the total stocks of all oils on June 1 being approximately 39,000,000 barrels less than on the same date last year.

The total stock of all oils is now 600,000,000 barrels which is over 100,000,000 barrels less than the peak in 1929.

Thus the industry has made considerable progress in reducing its burdensome aboveground storage which has proved a heavy handicap upon all efforts to advance prices to a profitable level.

However, of greater importance than the reduction in inventories or any possible aid the government may give to the industry in the regulation of its business, is the sustained demand for petroleum products.

This, after all, is the greatest asset any business can have and the oil industry has in this respect outdistanced every other major industry.

The government figures available for the first five months of 1933 show that the domestic demand for gasoline totaled 142,224,000 barrels, a decrease of only 1,922,000 barrels or a little over one per cent compared to the same period of 1932.

Compared to 1931, which was the peak year in domestic consumption, the record for the first five months of 1933 shows the domestic demand for gasoline was 93 per cent of that peak.

Taking into consideration the gasoline run to storage last year to anticipate the new Federal tax the available figures show that there was an actual increase in the domestic demand for gasoline in June of this year over June a year ago.

Gasoline exports, it is true, have continued to fall but even considering that decrease the loss in demand for the first five months of the year was less than five per cent compared to the same period in 1932.

There was a substantial increase in the domestic demand for kerosene during the first five months of the year compared to the like period of the previous year. Despite a decrease in exports the total demand was also greater. This gain was probably due in some measure to tractor fuel and the growth in the use of range oil burners, the latter indicating the possibilities for the industry in the field of burning oil, a field in which many competent observers see a potential outlet as great as that for gasoline.

In the face of a large decrease in the demand for coal and other fuels the consumption of heavy fuel and gas oils declined only five per cent in the first five months of 1933, notwithstanding the fact that in that period industrial activity was exceptionally dull.

Among the minor petroleum products the export and domestic demand for petroleum wax increased seven per cent; stocks on June 1 were approximately 70,000,000 pounds less, a decrease of 33 per cent.

The demand for many other special products of petroleum has also held up remarkably well during the depression indicating a large increase when conditions become normal.

These figures, let us remember, represent the darkest months of the general depression and they show how comparatively little the business of the oil industry was affected so far as demand for its products went.

The red ink on oil company books was not due to falling off in business but to uneconomic conditions within the industry. As we enter the second half of the year the skies are brightening. There are hopes that the racketeer and the tax evader will be driven out of the oil business, that production, both of crude oil and refined products, will be kept down to actual demand and that unfair competition will be stamped out.

With these internal tumors removed and the oil business restored to health it will find its markets, so little reduced by the depression, ready for a new expansion on profitable lines.

Pools Were Opened in Several States in First Half of Year; Drilling Was Greatly Curtailed

By JAMES McINTYRE

The first six months of 1933 may go down in history as the dullest half year in the modern history of the oil business as far as drilling is concerned. Only 4,972 wells were completed, of which 2,957 were oil wells, 381 were gas wells and 1,634 were dry holes.

The paucity of new oil wells may be appreciated when the record of the first half of 1926 is noted. In that six months' period 12,995 wells were completed of which 8,253 were oil wells, or 3,281 more than in the half year just closed. The year 1926 is cited because it was the last prosperous year the oil business had. It was in that year that Seminole upset the oil man's apple cart and started the crude and refined markets downward. Successive big fields opened and developed together with the general industrial and financial crash of 1929-30 have made the oil business a nightmare for many engaged in it in the past six years.

The first half of this year witnessed a shift in the scene of operations. The limelight that has been directed on the East Texas Field, of mad and profitless development, was turned from that field and was played on the Gulf Coast of Texas, where the Conroe Field, opened in 1932, was making history and where new pools, which may prove of major importance were opened by the never-to-be discouraged wildcatter. Kansas also came in for considerable attention because of the development of the central pools most of which were hangovers from either the year before or from previous years, yet slow of development because of the lack of shipping facilities. Central Michigan was not overlooked in the generol interest in crude oil production and the new Midland area of production developed into a field of major proportions with the completion of a bare 25 wells.

Three New Pools on Gulf Coast

Three new fields were opened in the Gulf Coast Field, and the Conroe Field reached the peak of its development after proving up 15,000 acres, far larger than any other field in the Gulf Coast.

The new pools were Tomball, Greta and Colita, which have yet to prove that they are major areas. A half dozen other areas show favorable signs of oil, but no commercial production. Important extensions were made in the Conroe, East Hackberry, Manvel, Hankamer, Thompson (Rabbs Ridge) and Iowa Pools. The closeness of the Gulf Coast fields to refineries and Gulf ports makes quickly provided pipe line facilities possible, so that anyone opening a pool in that part of Texas is assured a ready market.

Several New Pools In Oklahoma

Oklahoma completed 522 wells, or 77 more than in the first half of last year, and 71 more oil wells than in the same 1932 period. They averaged lower in initial production. Only 27 wells were completed and put on production in the Oklahoma City Field, which is practically drilled up. In the same period in 1926 2,545 wells were completed in Oklahoma in the first half of the year. The most important development in the State in the past six months was the careful but successful handling of the Lucien area in southeastern Noble County, sometimes called the Wentz Pool, a unit operation engaged in by eight oil companies. It was opened in 1932 but the discovery well was shut in in line with the proration policy of the State regarding wildcat pool discovery wells. A 10,000-bbl. initial producer on the west side of the pool completed in May was the best of the crop of five wells finished up to June 30. Discoveries of less importance were made in the Greater Seminole area. The Keokuk Falls Pool in Seminole County was opened by the Carter, Gypsy and Sinclair Prairie companies on a unitized block. It produces from the Misener sand. The Sasakwa Townsite Pool was another new Greater Seminole field. The West Holdenville Pool was not a 1933 discovery but it was developed into a sizable pool and in January of this year a new producing sand was found there. The Sacred Heart Pool in Pottawatomie County was extended and an important gas field was opened in Pontotoc County. The ancient Creek County Field, the home of the Glenn Pool and the Cushing Pool, witnessed the opening of another new pool in the old Olive district, east of the Cushing Field. Layton sand was found very productive in Township 18-8 and 1,000-bbl. wells were reported by the fortunate operators. The veteran operator, J. E. Crosbie, completed the largest of the wells brought in in that area.

SUMMARY OF COMPLETED WORK IN ALL THE FIELDS OF THE UNITED STATES IN FIRST SIX MONTHS OF 1933 AND IN SAME PERIOD OF 1932

	First 6 mos.	Comp.	Initial prod.	Dry holes	Gas wells	Oil wells	Av. init. prod. (bbls.)
Eastern	1933	458	1,429	62	127	269	5.31
	1932	738	2,884	111	147	480	6.01
Central Ohio	1933	127	544	31	73	23	23.65
	1932	198	868	63	95	40	21.70
Michigan	1933	102	22,350	27	3	72	310.43
	1932	66	41,655	22	7	37	1,125.81
Lima	1933	40	768	6	14	20	38.40
	1932	56	619	11	24	21	29.48
Indiana	1933	73	368	26	25	22	16.73
	1932	75	1,462	34	23	18	81.22
Kentucky	1933	77	2,677	38	3	36	74.36
	1932	217	6,513	62	35	120	54.28
Alabama	1933	1	.....	1	....	....	.....
	1932	.....	.....	....	....	....	.....
Mississippi	1933	19	150	12	6	1	150.00
	1932	35	.....	8	27	....	.....
Illinois	1933	8	15	5	1	2	7.50
	1932	18	50	10	2	6	8.34
Kansas	1933	240	77,909	83	9	148	526.41
	1932	230	82,509	77	9	144	572.91
Oklahoma	1933	522	133,342	192	30	300	444.47
	1932	445	320,573	159	57	229	1,399.88
North Central Texas	1933	465	10,381	299	19	147	70.62
	1932	518	15,206	284	27	207	73.46
West Texas	1933	127	24,083	29	0	98	245.74
	1932	90	9,343	34	2	54	173.02
E. Central and E. Texas.	1933	913	53,999	83	1	829	*65.13
	1932	2,823	211,937	101	6	2,716	*75.07
East Texas gas area	1933	12	.....	12	0	0	.....
	1932	24	.....	18	6	....	.....
Texas Panhandle	1933	87	15,406	9	14	64	240.72
	1932	65	13,869	6	16	43	322.54
Gulf Coast, Texas	1933	685	805,663	147	7	531	1,517.26
	1932	269	83,014	131	7	131	633.69
Southwest Texas	1933	498	67,930	300	28	170	399.59
	1932	369	33,045	189	24	156	211.82
North Louisiana	1933	149	9,484	93	12	44	215.55
	1932	122	21,716	58	19	45	482.58
Gulf Coast, Louisiana	1933	102	36,075	58	1	43	838.95
	1932	91	53,054	36	1	54	982.49
Arkansas	1933	28	395	24	0	4	98.75
	1932	18	335	16	....	2	167.50
Montana	1933	18	1,256	3	2	13	96.61
	1932	14	5,356	5	1	8	669.50
Wyoming	1933	16	531	8	2	6	*88.37
	1932	14	1,546	5	....	9	171.78
Colorado	1933	16	.....	14	2	....	.....
	1932	18	57	14	2	2	28.50
New Mexico	1933	38	121,465	8	0	30	4,048.83
	1932	23	62,810	6	2	15	4,187.33
Utah	1933	4	2	2	0	2	1.00
	1932	1	35	....	....	1	35.00
California	1933	147	77,978	62	2	83	939.50
	1932	209	63,235	114	8	87	726.83
First 6 months	1933	4,972	1,464,200	1,634	381	2,957	495.16
First 6 months	1932	6,746	1,031,691	1,574	547	4,625	223.07
Difference		1,774	432,509	60	166	1,668	272.09
First 6 months	1932	6,746	1,031,691	1,574	547	4,625	223.07
First 6 months	1931	6,373	4,131,038	2,206	1,119	2,988	1,382.54
First 6 months	1930	11,360	4,057,729	3,393	1,249	6,718	604.01
First 6 months	1929	11,941	3,265,396	3,706	1,233	7,002	466.35
First 6 months	1928	10,455	3,113,947	3,428	1,273	5,754	541.18
First 6 months	1927	12,738	2,340,422	3,384	1,101	8,253	283.58
First 6 months	1926	12,995	1,317,432	3,644	1,067	8,264	157.86
First 6 months	1925	12,080	2,666,746	3,069	1,085	7,926	336.46
First 6 months	1924	10,940	1,707,093	2,457	1,114	7,369	231.66
First 6 months	1923	13,013	2,587,761	3,014	1,108	8,801	294.03

*Initial production in East Texas consists of short-time gauges, ranging from a few minutes upward, and the resultant figures do not in any way represent what the completed wells could have done on a 24-hour initial production test.

Kansas Was Active

Field work in Kansas was on an average of that done throughout the past three years, and new pools, extensions to pools and deeper productive sands were among the half year's accomplishments. The Mabee Pool in McPherson County and the Hollow Pool in northern Harvey County were the most interesting spots in the State and it was thought that the two pools might be joined. The discovery of Wilcox sand production in the Hollow Pool added to the interest there and this region is due for considerable work in the last half of the year. There are four pay sands in the Hollow Pool. The Chase Townsite Pool in Rice County was an important discovery of the half year and the completion of a 2,400-bbl. well in June added to the interest being shown in that area.

The Atlantic Oil Producing Co. opened a new pool in Stafford County in May but the well was shut in and no other wells have been started thereabouts. The discovery well swabbed 240 bbls. in 24 hours.

Southwest Texas Activities

Operators in Southwest Texas completed 30 per cent more wells than in the first half of 1932, and while a number of new productive spots were opened, the Hilbig Pool in Bastrop, a February, 1933, discovery was the scene of the most interesting development. Another Serpentine pool was opened in Bastrop County in June. Duval County was the busiest field in the Southwest Texas area with a record of 129 completions in the six months' period.

Drilling Slows Up in East Texas

A total of 390 wells was completed in Gregg County, in the East Texas Field, 365 in Rusk County, 29 in Smith County, 63 in Upshur and 6 in Cherokee County, or 853 in all. In the same period last year 2,744 wells were completed in the same counties. As the wells were permitted to flow only a short time on the first day it was impossible to get an initial 24-hour production on any but the small wells. Field work fell off greatly. At the close of June the field had 10,183 producing wells which had been completed since the fall of 1931, a record breaking development. The field is mostly drilled up, and already is partly on the pump. By the close of the year many more wells will be put to pumping wherever their owners can raise the money to pay for the expensive equipment. East Texas was developed partly by individual operators of small means and poorly financed partnerships and companies. With restrictions on the production of the field and low prices many of these are having difficulty in making both ends meet. Millions of barrels of overproduced

(Continued on Page 124)

Flush Fields and Illegal Oil Runs Responsible for Increased Crude Production in United States

By JAMES McINTYRE

While the production of crude oil in the United States in the first half of the year was 39,022,180 bbls. in excess of that of the same period last year, and 19,271,858 bbls. more than in the same period of 1931, it was 33,847,565 bbls. less than in the same period in 1930 and was exceeded by the production of other recent similar periods as follows: First half of 1929 by 50,775,272 bbls., first half of 1928 by 1,392,589 bbls. and first half of 1927 by 9,692,749 bbls., so it will be seen that while the prices of crude oil and refined products reached rock bottom levels it was not altogether attributable to excessive production of crude oil this year. The increase in East Texas alone was 3,830,217 bbls. in excess of the total increase in the United States over the first half of last year. The combined increase of production in East Texas, Oklahoma City and Conroe, Tex., was 59,808,692 bbls., as against a total for the whole country of 39,022,180 bbls., indicating a falling off in other fields of 20,786,512 bbls.

"Hot Oil" Figured Largely

Millions of barrels of oil produced in disregard of legal production allowables made by the Texas Railroad Commission and the Oklahoma Corporation Commission comprised much of the unexpectedly large production yielded by Texas and Oklahoma in the six months' period. Regardless of price some producers got rid of all the oil they could find a market for, most of the crude going out in tank cars. Much of this oil was bought by brokers who gambled on selling it at a profit to refiners at various points of destination.

At the beginning of the year it was expected that production this year would be less than in 1932, and until the third week in February it appeared that the expectations would be realized. Then East Texas began to assert itself and from a production of 10,459,555 bbls. in January it changed to 17,355,872 bbls. in March. It fell off to 10,916,250 bbls. in April while potentials were being taken, but in May it hit its all-time peak for a month by pouring out 31,322,545 bbls., an average of more than 1,000,000 bbls. per day, an unprecedented figure. A partial shut down in June brought production down to 22,908,640 bbls.

Gulf Coast's Big Increase

The Texas Gulf Coast also manifested a desire to run away with production, starting off in January with a record of 3,906,389 bbls. or 126,013 bbls. per day, and increasing steadily to an average of 182,231 bbls. per day in May, the highest figure it ever reached. It ended the half year with an average of 176,038 bbls. per day in June. The Conroe Field was largely responsible for the increase, with some help from the Thompson Field, formerly carried in these reports as the Rabbs Ridge Field.

In Oklahoma the Oklahoma City Field which produced 27,039,796 bbls. in the first six months, exceeded its production in the same period last year by 8,852,528 bbls.

California Slows Up

Crude oil production in California during the half year was the lowest for any similar period since 1922 when production aggregated 61,092,778 bbls. in the first half of that year. This half year's output was 84,407,535 bbls. Unfavorable marketing conditions in a part of the period were responsible for a lack of new wells and a decline in production. Kettleman Hills, the most interesting field in California at this time produced about the same quantity of oil this year it did in the like period in 1932.

Low Average Production of Wells

The accompanying table shows a total of 320,571 oil wells producing on June 30. Of these 175,480 wells in New York, Pennsylvania, Ohio, West Virginia, Indiana, Illinois and Kentucky produced an average of less than one-half barrel per day, and if we add to these eastern wells all the wells in Kansas and North Central Texas including flush, semiflush and strippers the combined 217,447 wells averaged only 1.2 bbls. per day. Then add the 58,742 wells in Oklahoma and the combined daily average production of the 276,189 wells, including Oklahoma City's gushers, the good wells in the Greater Seminole district and other flush and semiflush wells, only reaches the 2½-bbl. per day mark. If the flush and semiflush wells are taken out of the list, it would be easy to show 250,000 wells in the United States, the combined production of which did not average over 1 bbl. per well per day.

The Ups and Downs

Five producing divisions increased their production over the same period last year: Kansas, Oklahoma, East Central Texas, East Texas and the Gulf Coast. The aggregate increase was 57,231,092 bbls. Against this all the others showed a decline, but of only 18,208,912 bbls., the greatest loss having been in California where production slumped 6,536,538 bbls. West Texas production declined 3,579,139 bbls. The detailed figures of gains and losses follow:

INCREASE IN PRODUCTION

	Bbls.
Kansas	1,355,032
Oklahoma	3,043,867
East Central Texas	356,339
East Texas	42,852,397
Gulf Coast (Tex., La.)	9,623,457
Total increase	57,231,092

DECREASE IN PRODUCTION

	Bbls.
New York	348,000
Pennsylvania	493,000
Ohio	290,000
West Virginia	264,000
Kentucky	778,000
Michigan	220,000
Tennessee	1,000
Indiana	137,000
Illinois	846,000
North Central Texas	553,096
West Texas	3,579,139
Texas Panhandle	927,463
Southwest Texas	879,303
Arkansas	752,343
North Louisiana	33,216
Wyoming	1,064,974
Montana	121,464
Colorado	160,291
New Mexico	224,085
California	6,536,538
Total decrease	18,208,912

PRODUCTION OF PRODUCING DIVISIONS BY MONTHS

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
California	14,460,282	13,107,043	13,414,980	14,262,943	14,817,633	14,344,654	84,407,535
Texas	26,115,932	25,092,383	34,242,444	27,306,582	49,151,776	39,907,737	201,816,854
Oklahoma	12,550,784	12,570,992	15,455,236	11,720,010	13,521,580	14,339,070	80,157,672
Kansas	2,871,282	2,801,512	3,604,539	3,492,990	3,277,103	3,210,150	19,257,576
Arkansas	993,457	880,208	943,702	909,120	928,667	901,770	5,556,924
Louisiana	2,021,117	1,793,443	2,070,695	2,156,736	2,116,296	2,009,831	12,168,118
Rocky Mountain	2,241,610	2,096,612	2,371,469	2,209,470	2,294,558	2,239,650	13,453,369
Eastern	3,112,000	2,747,000	3,118,000	3,017,000	3,177,000	3,057,000	18,228,000
Total United States	64,366,464	61,089,193	75,221,065	65,074,851	89,284,613	80,009,862	435,046,048

SUMMARY OF CRUDE OIL PRODUCTION IN UNITED STATES FIRST SIX MONTHS OF 1933

	1927 prod. first 6 mos. (bbls.)	1928 prod. first 6 mos. (bbls.)	1929 prod. first 6 mos. (bbls.)	1930 prod. first 6 mos. (bbls.)	1931 prod. first 6 mos. (bbls.)	1932 prod. first 6 mos. (bbls.)	1933 prod. first 6 mos. (bbls.)	No. of oil wells producing June 30	Ave. dly. prod. per well 6 mos. (bbls.)
New York	1,101,000	1,174,000	1,609,000	2,172,000	1,637,000	1,832,000	1,484,000	14,200	.58
Pennsylvania	4,750,000	4,829,000	5,489,000	7,344,000	5,465,000	6,427,000	5,934,000	78,500	.42
Ohio	3,842,000	3,594,000	3,252,000	3,390,000	2,811,000	2,357,000	2,067,000	36,600	.31
West Virginia	3,022,000	2,881,000	2,760,000	2,792,000	2,210,000	1,996,000	1,732,000	14,300	.67
Kentucky	3,200,000	3,633,000	3,464,000	3,878,000	3,176,000	2,994,000	2,216,000	14,900	.82
Michigan	216,000	211,000	1,273,000	2,146,000	1,511,000	2,950,000	2,730,000	680	49.55
Tennessee	26,500	24,000	12,000	7,000	4,000	2,000	1,000	.....	....
Indiana	409,000	496,000	502,000	519,000	409,000	437,000	300,000	2,380	.70
Illinois	3,587,000	3,223,000	3,067,000	3,010,000	2,283,000	2,610,000	1,764,000	14,600	.67
Kansas	21,455,000	19,760,362	18,784,674	21,220,994	20,070,775	17,902,544	19,257,576	18,875	5.64
Oklahoma	129,565,618	117,458,526	126,020,255	117,779,527	95,838,677	77,113,805	80,157,672	58,742	7.54
North Central Texas	30,023,634	23,546,887	25,170,461	24,842,224	15,029,694	13,544,129	12,991,033	23,002	3.11
West Texas	15,915,827	58,209,778	65,533,126	58,824,487	40,690,647	32,807,924	29,228,785	3,048	52.98
Texas Panhandle	22,925,094	13,074,052	11,855,526	17,163,665	10,092,312	9,124,081	8,196,618	1,904	22.71
East Central Texas	7,673,768	4,298,691	3,712,775	5,616,731	8,877,881	9,982,024	10,338,363	923	61.88
East Texas	.....	.....	.....	.....	31,532,184	60,752,039	103,604,436	10,183	56.21
Gulf Coast	28,274,834	23,276,495	26,754,614	35,982,479	31,422,135	24,551,304	34,174,761	3,120	60.52
Southwest Texas	6,713,732	4,840,921	12,039,599	12,275,729	13,563,721	11,094,330	10,215,027	4,368	12.92
Arkansas	21,742,314	16,443,803	13,432,562	10,332,347	8,649,636	6,309,267	5,556,924	2,905	10.57
North Louisiana	9,068,817	8,118,780	6,449,462	7,259,246	7,227,389	5,269,165	5,235,949	2,423	11.93
Wyoming	10,779,747	10,561,844	9,145,923	8,927,810	7,814,930	6,602,252	5,537,278	3,702	8.26
Montana	2,073,040	2,063,213	1,809,606	1,646,357	1,501,846	1,196,703	1,075,239	1,452	4.09
Colorado	1,398,539	1,353,756	1,255,498	850,036	758,242	614,793	454,502	191	13.15
New Mexico	773,105	404,683	544,826	2,511,118	7,522,672	6,610,435	6,386,350	439	80.37
Utah	8,600	.....	.....	.....	.....	.....	.....	.....	....
California	116,184,628	112,961,846	141,884,413	118,402,863	95,675,449	90,944,073	84,407,535	8,954	52.08
Total	444,738,797	436,438,637	485,821,320	468,893,613	415,774,190	396,023,868	435,046,048	320,571	7.50

New Lows in Average Prices for Refined Products Established in the First Six Months of 1933

By C. O. WILLSON

The record of the first half of 1933 in crude oil and refinery markets supports the statement that "a situation is never so bad that it cannot become worse." At the close of 1932, following a two-year period of exceptionally low prices, the industry as a whole felt that any change in 1933 must be for the better. Actual developments as they were unfolded from week to week revealed the futility of that hope and when the half year was ended new low prices had been established for the post-war period of the oil business. Fortunately, the last 30 days of the six months witnessed the start of a reversal in price trends and as the six months ended there was reason to believe that the last half of the year would bring a substantial recovery in average prices.

Happenings the first five months of 1933 were largely a continuance of unsatisfactory conditions which had their beginning in 1932. In that year there was a general effort to place all the industry's markets on higher levels following 1931, a year in which prices sunk to the lowest levels since the World War, which starts the period in which the oil business became a major industry. Backed by various types of proration programs, crude prices were advanced in 1932 so that the average price for Mid-Continent crude, as shown in the accompanying table, was approximately 35 per cent higher than in 1931. Gasoline and some of the other refinery products were also slightly higher in 1932. However, as the latter year was drawing to a close it became apparent that the proration programs were not accomplishing their objectives due largely to the fact that enforcement measures were not adequate. Refined markets—particularly in the case of gasoline—began to be dominated by crude oil sold under the posted prices and the latter before the year ended started to decline.

These downward price trends were carried over into 1933 until 36-degree gravity Mid-Continent crude oil, which started the year at a posted price of 69 cents at the wells, dropped to 25 cents per barrel on May 6 and continued at that level until June 17, when prices were returned to the 44-cent level. Low octane U. S. Motor gasoline in Oklahoma, commonly conceded to be the barometer of the spot market in motor fuel markets throughout the United States, with the exception of the West Coast area, reached a low of 1⅞ cents per gallon late in April, and the following month the principal grade of natural gasoline in the same State was sold in substantial quantities at a price of 1 cent per gallon, with many sales under that price.

Most of the other refinery products did not fare as badly as motor fuel, although new lows were established in some cases. The profits of the industry largely center around the motor fuel markets, and the fact they dropped to new lows, as did the crude oil from which it is obtained, reflects the serious plight of the industry during the six-month period and indicates the recovery necessary under the proposed government supervision before the markets will reach profitable levels.

Crude Oil

The average daily price for 36-degree gravity crude oil at the wells in Oklahoma, Kansas, North and Central Texas as posted by one of the large buyers for the first six months of 1933 was 44 cents. This compares with an average of 88 cents for 1932 and 63 cents in 1931, the latter being the lowest previous average since before the entry of the United States into the World War. During the six months the posted price was 25 cents for 42 days, 44 cents for 122 days and 69 cents for 17 days.

The crude market started to tighten after being reduced to 25 cents on May 6, due to the fact that buyers were willing to purchase the crude oil in excess of current requirements for storage purposes. This strength in the crude market resulted in a price increase to 44 cents for the 36-gravity grade, the same price that prevailed from January 18 to May 6.

The percentage decline in posted prices for Pennsylvania grade crude was less than in the Mid-Continent. The posted price in National Transit lines started the year at $1.72 per barrel and dropped to $1.27 on May 6, the lowest posted price for Pennsylvania grade crude in many years. In three advances starting May 22 prices advanced to $1.57 before the close of the half year.

In California fluctuations in crude oil prices as usual were less violent than in competitive areas. The posted price for 25-degree gravity Long Beach crude oil at the start of 1933 was 93 cents per barrel. This price was decreased to 71 cents on March 5, and on June 26 advanced to 80 cents with an average of 79 cents for the six-month period.

Gasoline

The average price for low octane U. S. Motor gasoline in Oklahoma the first six months of this year was 2.27 cents per gallon, or 95 cents for a 42-gallon barrel. This means that the average price for this grade of gasoline was less than the average delivered refinery price (including pipe line charge) for crude oil in Oklahoma in 1932. For the first six months the 26-70 grade of natural gasoline averaged 1.72 cents per gallon, or 72 cents per barrel. This same product in 1925 and 1926, as shown in the accompanying table, brought an average price of from 9 to 12 cents per gallon.

These data, which are representative of conditions on gasoline for the United States outside California, show the absurd levels to which quotations were permitted to drop in a general collapse of price structures.

Along the Atlantic seaboard the average price for low octane U. S. Motor gasoline at Bayonne, N. J., for the first six months was 5.03 cents, which compares with an average of 6.43 cents for 1932. At the Gulf Coast the U. S. Motor gasoline brought an average price of 3.44 cents for export delivery the first half year and the 64-66 375 gasoline, which normally is a popular export grade, brought an average price of 3.75 cents. Exporters were compelled to cope with a surplus gasoline situation in Russia and Rumania as well as excess supplies in the United States. Exports of gasoline for the first half year were approximately 50 per cent of the peak with relatively little business placed on a spot market basis.

Prices on blending naphthas followed the same general price trend as finished motor fuels. Among the special naphthas prices on all grades slumped the first half year. Prices in the Chicago refining district for rubber solvent averaged 5.29 cents the first half year, 4.91 cents for Stoddard solvent and 5.13 cents for V.M.P. naphtha.

Kerosene and Distillate

Kerosene and distillate usually are closely related in refining operations and marketing and in general follow the same market trends. There is now more inter-

(Continued on Page 39)

Average Prices on Representative Crude Oils and Refinery Products---First Half 1933 and Previous Years

OKLAHOMA—CRUDE OIL

	First half 1933	1932	1931	1930	1929	1928	1927	1926	1925	1924	1923
36 A.P.I. gravity, per bbl.*	$0.42	$0.88	$0.63	$1.23	$1.37	$1.31	$1.38	$2.13	$1.87	$1.63	$1.56

OKLAHOMA—REFINERY PRODUCTS

58-60 U. S. Motor gasoline, per gal.	‡.0227	‡.0392	.0345	.0634	.0775	.0795	.0667	.1031	.1055	.0896	.0978
Natural gasoline, 26-70, per gal.	.0172	.0222	.03	.0524	.0683	.0734	.0575	†.0946	†.1202	†.0866	†.0913
41-43 water white kerosene, per gal.	.0257	.0315	.0231	.0358	.0517	.0461	.0727	.0445	.0449	.04	
24-26 fuel oil, per bbl.	.4365	.4548	.4356	.7043	.706	.7694	.9792	1.3072	1.0908	.954	.9511
32-36 gas oil, per gal. (industrial)	.0116	.0146	.0127	.0227	.0265	.0247	.0299	.0419	.0368	0291	.0266
200 vis. neutral oil, 3 color, per gal.	.0790	.0834	.0924	.1059	.0966	.0947	.1032	.1072	.1139	.1308	.1317
124-126 wax, per lb.	.0179	.0170	.0174	.0216	.0321	.0394	.0294	.0471	.0516	.0446	.0254
150-160 D color bright stock, per gal.	.1510	.1837	.1631	.2977	.3368	.2310	.....	.....	.....	.....	.....

PENNSYLVANIA—CRUDE OIL

	First half 1933	1932	1931	1930	1929	1928	1927	1926	1925	1924	1923
Crude oil in National Transit Lines, per bbl.	$1.47	$1.88	$1.81	$2.55	$3.09	$2.98	$2.87	$3.51	$3.50	$3.60	$3.33

PENNSYLVANIA—REFINERY PRODUCTS

58-60 U. S. Motor gasoline, per gal.	.0469	.0568	.049	.0737	.0905	.0982	.09	.1273	.1348	.1224	.1352
45 water white kerosene, per gal.	.0430	.0451	.04	.0501	.0651	.0635	.0646	.0885	.0656	.0671	.0652
Pennsylvania bright stock, 10-15 pour test, per gal.	.2094	.2466	.2094	.3373	.4745	.3186	.3326	.3954	.3824	.3655	.3337

CALIFORNIA—CRUDE OIL

	First half 1933	1932	1931	1930	1929	1928	1927	1926	1925	1924	1923
25 A.P.I. gravity, Long Beach, per gal.	$0.79	$0.83	$0.76	$1.16	$1.05	$0.96	$1.00	$1.37	$1.35	$1.06	$0.74

CALIFORNIA—REFINERY PRODUCTS

U. S. Motor gasoline, per gal.	.0497	.0546	.0510	.0806	.0849	.0919	.0873	.1134	Average prices on refined products for 1925, 1924 and 1923 on comparable basis not available.
75-78, 375-390 e.p., natural gasoline, per gal.	.0388	.0447	.0418	.0712	.0803	.0726	.093	.1465	
38-40 kerosene, per gal.	.0358	.0398	.0425	.0455	.0569	.0611	.07	.0745	
15-20 fuel oil at tidewater, per bbl.	.5173	.5548	.5836	.6346	.6724	.8892	.9221	.9813	

*Based on posted price for Oklahoma, Kansas and North Texas. 1932 and 1933 average, based on posted prices of Stanolind Crude Oil Purchasing Co. †Grade A. ‡Low octane rating.

Note—Average prices on refined products are based on low quotations as published weekly in The Oil and Gas Journal. Crude prices are daily averages based on posted schedules of major buyers.

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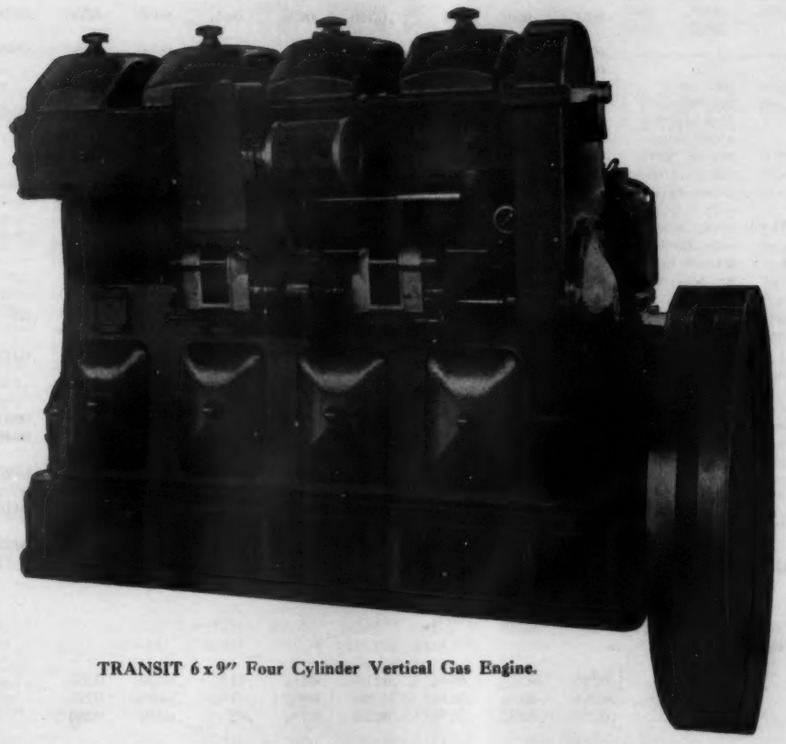

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The Oil and Gas Journal's Table Showing Low Average Prices for First Half of 1933, 1932 and 1931 on Representative Refinery Products (f.o.b. Plants and Terminals) for Domestic and Export Movement

	First half 1933			1932					1931				
							Av. price					Av. price	
	Ave. price	High	Low	Av. pr. for yr.	High	Low	1st 6 mos.	2nd 6 mos.	Av. pr. for yr.	High	Low	1st 6 mos.	2nd 6 mos.
GASOLINES—													
Oklahoma (Group 3):													
U. S. Motor grades:*													
Regular	.0257	.04⅝	.02⅛	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Premium	.0282	.04¾	.02⅝	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Third grade	.0227	.03¾	.01⅞	.0392	.05	.02⅛	.0381	.0403	.0345	.05	.02⅛	.0335	.0354
60-62 400 (no octane rating)	.0244	.03⅞	.02	.0411	.05⅛	.02⅜	.0399	.0422	.0366	.05⅛	.02⅜	.0357	.0376
64-66 375	.0269	.04½	.02¼	.0444	.05⅝	.02¾	.0434	.0454	.0390	.05⅝	.02¾	.0392	.0406
68-70 350	.0296	.04½	.02⅝	.0461	.05½	.02⅞	.0451	.0471	.0420	.05½	.02⅞	.0422	.0418
North Texas:													
U. S. Motor—Third grade*	.0221	.03¾	.01⅞	.0384	.04⅞	.02⅝	.0374	.0393	.0330	.05	.02⅛	.0314	.0346
64-66 375	.0269	.04¼	.02¼	.0436	.05¼	.03⅝	.0429	.0444	.0397	.05⅝	.02¾	.0389	.0404
Pennsylvania:													
U. S. Motor	.0469	.05¼	.04¼	.0568	.06⅞	.04	.0511	.0626	.0490	.06¼	.04¼	.0546	.0434
California:													
54-58, U. S. Motor	.0497	.05½	.04	.0546	.06¼	.04¼	.0498	.0593	.0510	.08½	.03	.0481	.0538
New York (Bayonne, N. J.):													
U. S. Motor, below 65 octane	.0503	.05¾	.04	.0643	.08	.05½	.0605	.0682	.0604	.07	.05⅛	.0644	.0564
65 octane and above	.0529	.06	.04½	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gulf Coast (domestic):													
U. S. Motor, below 65 octane	.0338	.04⅞	.03	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
65 octane and above	.0396	.05⅛	.03½	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
NAPHTHAS—													
Oklahoma (Group 3):													
50-52 450 (blending)	.0224	.03½	.02	.0457	.04⅞	.02⅝	.0503	.0411	.0336	.04½	.02⅛	.0336	.0591
Chicago:													
Rubber solvent, 68-70 gr., 100 i.b.p.-300 e.p.	.0529	.05¾	.04½	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stoddard Solvent, 300 i.b.p.-410 e.p.	.0491	.05¼	.04¼	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
V.M.P., 56-58 gr. 190-200 i.b.p.-330 e.p.	.0513	.05¾	.04¾	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
NATURAL GASOLINES—													
Oklahoma (Group 3):													
26-70	.0172	.03	.01	.0222	.03	.01⅜	.0190	.0254	.03	.05	.01⅝	.0241	.036
California:													
75-78 375	.0388	.04½	.03½	.0447	.05¼	.03¾	.0444	.045	.0418	.05¾	.01¾	.0370	.0466
KEROSENE—													
Oklahoma (Group 3):													
41-43 water white	.0257	.03⅛	.02¼	.0315	.04¼	.02⅝	.0317	.0313	.0231	.03	.01¾	.0202	.02
42-44 water white	.0270	.03¼	.02⅝	.0327	.04½	.02½	.0325	.0329	.0249	.03¼	.02	.0281	.0216
North Texas:													
41-43 water white	.0247	.03⅛	.02⅛	.0309	.04¼	.02⅝	.0314	.0303	.0215	.03	.01¾	.0235	.0195
Pennsylvania:													
45 water white	.0439	.04¾	.04	.0451	.05	.04	.0442	.0459	.0410	.05¼	.03½	.0453	.0366
California:													
38-40 high burning test	.0358	.03¾	.03½	.0398	.04½	.03¾	.0392	.0404	.0425	.05	.03¼	.0436	.0413
New York (Bayonne, N. J.):													
41-43 water white	.0522	.05½	.04¾	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gulf Coast:													
41-43 water white	.0393	.04½	.03¾	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
FURNACE OILS AND TRACTOR FUELS—													
Oklahoma (Group 3):													
32-36 straw zero	.0206	.02½	.01⅝	.0218	.03⅛	.01⅝	.0179	.0256	.....	.....	.....	.....	.....
38-40 straw	.0218	.02⅝	.01⅝	.0238	.03⅝	.01¾	.0198	.0277	.....	.....	.....	.....	.....
39-41 prime white	.0214	.02¾	.01¾	.0258	.03⅝	.02	.0229	.0286	.....	.....	.....	.....	.....
New York (Bayonne, N. J.):													
36-40	.05	.05	.05	.0472	.05	.03¾	.0453	.0492	.....	.....	.....	.....	.....
21 (industrial)	.035	.03½	.03½	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
GAS OIL, DIESEL OIL AND FUEL OIL—													
Oklahoma (Group 3):													
U.G.I. gas oil	.0116	.01⅝	.00⅞	.0146	.02⅛	.01	.0122	.0171	.0127	.02	.00⅝	.0143	.0111
28-30 zero to 10	.7135	.85	.60	.6397	1.00	.45	.0487	.7923	.....	.....	.....	.....	.....
24-26	.4365	.60	.35	.0454	.65	.35	.3846	.5250	.4356	.65	.30	.5240	.3471
Below 16	.3298	.40	.27½	.3250	.45	.20	.2596	.3904	.2904	.42½	.20	.3510	.2298
27 plus Diesel	.8212	.90	.75	.7432	.85	.70	.7538	.7327	.7510	.80	.70	.7462	.7558
15-19 bunker (at tidewater)	.5173	.55	.50	.5548	.60	.50	.5635	.5462	.5836	.60	.55	.5673	.60
Gulf Coast:													
Bunker C (bulk cargoes), 28-30 Diesel	1.50	1.50	1.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New York (Bayonne, N. J.):													
28 plus (G.O.)	.0391	.04	.03¾	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
28-30 Diesel*	1.65	1.65	1.65	1.502	1.65	1.30	1.3538	1.65	1.5673	1.85	1.301	1.7538	1.3808
Bunker C†	.7250	.75	.70	.7269	.85	.60	.6615	.7923	.8346	1.05	.60	.9923	.6769
*Lighterage 6½ cents barrel. †Lighterage.													
NEUTRAL OILS—													
Oklahoma (Group 3), zero to 10 cold test:													
180, 3 color	.075	.07½	.07½	.0753	.08	.07½	.0755	.075	.0798	.08½	.07½	.0821	.0764
200, 3 color	.070	.08¼	.08	.0834	.08½	.08¼	.0843	.0825	.0921	.09¾	.08½	.0944	.0898
240, 3 color	.0993	.10	.09¾	.0973	.10½	.09½	.0971	.0975	.....	.....	.....	.....	.....
200, 3 color (15-30 cold test)	.0733	.07½	.07¼	.0778	.08¾	.07½	.0785	.0770	.....	.....	.....	.....	.....
Pennsylvania:													
200, 3 color, 10 pour test	.1633	.19¼	.14	.1956	.21	.17	.1992	.1921	.2031	.22½	.17¼	.2007	.2056
Gulf Coast:													
200, 3 pale oil	.0612	.06½	.05½	.0643	.07	.06	.0658	.0627	.0775	.08¼	.07	.0807	.0743
200, 5-6 red oil	.0515	.05¼	.05	.0506	.06	.05	.0531	.05	.0699	.07½	.06	.0731	.0666
California:													
200, 2½-3 pale	.0981	.10	.09½	.0820	.10	.07¾	.0822	.0818	.095	.10	.09	.0988	.0912
200, 4-5 red	.0898	.09½	.08¾	.0785	.09¾	.07	.0812	.0759	.0956	.09¾	.09½	.095	.0962
BRIGHT AND STEAM REFINED STOCKS—													
Oklahoma (Group 3):													
150-160, zero to 10	.1510	.18¾	.12¼	.1837	.22	.15½	.1854	.1819	.1631	.19½	.12½	.1568	.1692
600 light green, S. R.	.0462	.05	.04	.0462	.05	.04	.0444	.05	.0486	.07	.04	.055	.0420
Pennsylvania:													
600 S. R.	.0911	.12¼	.07¼	.1236	.14	.09½	.127	.1202	.1014	.14¼	.07½	.0825	.1203
Bright stock, 10 pour test	.2004	.24½	.18	.2466	.28	.19	.2444	.2488	.2084	.29	.16¼	.1784	.2405

(Continued on Next Page)

The Oil and Gas Journal's Table Showing Low Average Prices for First Half of 1933, 1932 and 1931 on Representative Refinery Products (f. o. b. Plants and Terminals) for Domestic and Export Movement

(Continued from Preceding Page)

	First half 1933			1932					1931				
							Av. price					Av. price	
WAX—	Ave.			Av. pr.			1st	2nd	Av. pr.			1st	2nd
Oklahoma (Group 3):	price	High	Low	for yr.	High	Low	6 mos.	6 mos.	for yr.	High	Low	6 mos.	6 mos.
124-126 (crude scale)	.0179	.02¼	.01⅝	.017	.01⅞	.01⅝	.0169	.1707	.0174	.02	.01½	.0185	.0162
New York (Bayonne, N. J.):													
120-122 (a.m.p.)	.0266	.03	.02⅜	.0263	.02⅞	.02⅝	.0281	.2452	.0293	.03	.02¾	.0297	.0288
EXPORT PRICES—													
Gasoline—Gulf Coast:													
U. S. Motor	.0344	.04½	.03⅛	.0452	.05	.04	.0454	.045	.043	.05¼	.03½	.0453	.0406
64-66 375	.0375	.05	.03¼	.0482	.05½	.04¼	.0488	.0470	.0497	.06⅛	.03¾	.0542	.0452
Los Angeles, Calif.:													
U. S. Motor, 53-55 gr.	.0375	.03¾	.03¾	.0381	.04¼	.03¾	.0387	.0375	.0438	.07	.03¼	.0451	.0425
U. S. Motor, 65 octane	.0459	.04¾	.04½	.0489	.....	.....	.05	.0498	.....	.....	.....	.....	.....
Lubricants—New York (f.a.s. in bbls.):													
600 S. R. unfiltered	.1540	.19	.13	.2111	.23	.19	.2035	.2185	.1783	.22	.15½	.1624	.1925
Bright stock (No. 8 color)	.0438	.28½	.22½	.2971	.34	.24	.2935	.3008	.2803	.35½	.24¼	.2535	.3071
Bright stock (No. 6½ color)	.2377	.27½	.21½	.2792	.32	.23½	.2815	.2765	.....	.....	.....	.....	.....

Average Prices of Refinery Products Reach New Lows

(Continued from Page 36)

change in the utilization of the two products than ever before. The principal use for distillate is furnace oil and tractor fuel. Kerosene is used for both purposes as well as a burning oil in which a more refined product is required.

These products, despite a declining gasoline market showed marked price strength the latter part of 1932 and this improvement in several refining centers carried over into 1933. Reduced crude runs to stills at refineries, coupled with the expansion of cracking and reforming, has tended to reduce the output of these products and on the consuming end the demand curve in the United States has shown an upward trend.

In Oklahoma the average price for the 41-43 water white grade averaged 2.57 cents the first half of 1933 and this compares with 3.15 cents in 1932 and 2.31 cents in 1931. In Pennsylvania the 45 gravity grade averaged 4.3 cents for the first of 1933, which was slightly lower than the 1932 level and higher than the 4-cent average in 1931. Other domestic areas showed the same comparative price trend with the domestic price at the coast for the 41-43 grade averaging 3.93 cents.

In Oklahoma a 38-40 straw color distillate averaged 2.18 cents the first half of 1933, and this compares with 2.38 cents for 1932. The 32-36 straw zero, a grade of furnace oil for which there is a strong demand, brought an average price of 2.06 cents the first half of 1933.

Heavy Fuels

Heavy fuels, including Diesel oil and gas oil, held up better in price than many of the other products. Normally when crude oil prices dropped to 25 cents in Oklahoma, there would have been important price declines in residual oils and heavy overhead oils such as gas oils and Diesel oils. Due to reduced crude runs to stills and expanded cracking operations, few refiners have surplus material to offer outside their regular customers. Although the industrial demand for fuel oils has fallen off over the past three years the consumption of Diesel oils has expanded and the marine demand for all grades of fuels appears to have held up remarkably well.

The price for Bunker C fuel oil averaged 72.5 cents per barrel the first half year, which was practically the same as the average for all of 1932. Diesel fuel averaged $1.65 per barrel at the same point.

In Oklahoma, which is representative of the Mid-Continent, the average price for heavy industrial fuel oil under 16 degrees gravity the first six months was 32.98 cents. This compares with an average of 32.5 cents in 1932 and 29.04 cents in 1931.

Lubricants and Wax

The situation in regard to lubricants the first half year was somewhat mixed although prices in practically all areas showed a downward price trend the early part of the year. The 150-160, zero to 10 bright stock in Oklahoma fluctuated between a low of 12¼ cents and a high of 18¾ cents the first half year. The range for a similar grade of bright stock in Pennsylvania ranged from 18½ to 24½ cents.

Changes in paraffin base and naphthenic base oils over the six months were of minor importance, although average prices were lower than the previous year. Prices on paraffin wax were generally lower than last year, although there were important advances in June backed by a large reduction in stocks earlier in the year.

Gulf Coast Tanker Shipments of Crude Oil and Refined Products During 1932

(In barrels of 42 U. S. gallons)

CRUDE

Company, terminal and destination—	January	February	March	April	May	June	July	August	September	October	November	December	Total
Atlantic Pipe Line Co., Atreco, coastwise	1,278,048	1,217,241	879,552	1,085,658	1,150,369	819,081	751,042	848,309	664,054	893,550	1,074,455	1,105,206	11,766,569
Atlantic Pipe Line Co., Atreco, export	.....	.....	.....	.....	.....	132,699	.....	.....	167,904	73,774	.....	.....	374,378
Atlantic Pipe Line Co., Harbor Island, coastwise	(*)	(*)	(*)	(*)	(*)	483,169	116,462	491,638	157,798	188,121	326,494	277,965	2,041,651
Atlantic Pipe Line Co., Texas City, coastwise	(*)	(*)	(*)	(*)	(*)	310,287	444,118	359,081	497,847	375,745	407,906	429,914	2,824,901
Gulf Refining Co., Port Arthur, coastwise	293,315	302,615	228,796	181,131	199,936	266,468	131,474	341,720	199,878	385,878	396,783	372,632	3,110,631
Humble Oil & Ref. Co., Baytown, coastwise	227,321	76,190	75,772	88,340	115,599	201,914	.....	113,230	228,155	167,007	303,580	471,635	2,069,243
Humble Oil & Ref. Co., Baytown, export	.....	.....	.....	.....	.....	.....	.....	.....	27,472	.....	.....	35,282	62,754
Humble Oil & Ref. Co., Harbor Island, coastwise	2,412,069	1,773,809	2,276,042	2,328,161	1,962,235	2,353,832	2,491,675	2,248,735	2,210,861	1,866,312	2,250,556	2,142,760	26,328,047
Humble Oil & Ref. Co., Ingleside, coastwise	67,242	162,385	128,938	160,653	125,962	96,112	141,764	110,106	67,697	100,166	66,863	33,602	1,261,421
Humble Oil & Ref. Co., Neches, coastwise	76,119	.....	74,981	.....	.....	.....	76,396	.....	.....	76,088	.....	.....	302,584
Humble Oil & Ref. Co., Neches, export	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	21,395	21,395
Humble Oil & Ref. Co., Texas City, coastwise	420,368	554,837	239,468	580,583	478,412	359,080	680,136	376,077	560,631	339,427	491,787	661,660	5,742,465
Magnolia Pet. Co., Beaumont, coastwise and export	614,966	531,626	411,494	577,501	500,088	502,420	502,305	503,665	729,077	885,009	926,515	940,214	7,625,885
Pure Oil Co., Smith's Bluff, coastwise	436,271	188,103	288,655	108,762	508,205	399,799	482,858	355,035	400,753	426,309	432,869	407,346	4,424,929
Pure Oil Co., Smith's Bluff, export	.....	.....	.....	82,325	167,137	.....	.....	.....	.....	71,358	.....	.....	321,320
Standard Oil Co. (La.), Baton Rouge, coastwise	496,895	435,897	336,357	644,823	503,896	204,402	261,378	238,717	273,310	76,288	208,253	.....	3,724,216
Standard Oil Co. (La.) Baton Rouge, export	.....	89,587	73,103	70,056	.....	.....	.....	.....	.....	.....	.....	.....	232,746
Shell Pet. Corp., Houston, coastwise	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	†4,231,933
Shell Pet. Corp., Houston, export	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	†664,016
Sun Oil Co., Sabine Pass, coastwise	1,284,427	1,450,306	922,869	1,355,643	1,396,299	1,161,442	1,637,191	1,462,573	1,472,030	1,288,367	1,217,997	1,357,965	16,007,115
The Texas Company, Port Arthur, coastwise	1,516,605	994,594	824,004	1,381,913	1,141,145	861,830	1,425,486	1,084,740	877,285	1,054,860	453,380	1,106,850	12,722,692
The Texas Company, Port Arthur, export	124,014	68,480	126,752	599,523	611,371	674,304	549,407	593,682	359,140	289,427	416,990	63,853	4,776,943
‡Total 1932	9,247,161	7,895,673	2,836,734	9,255,574	8,860,716	8,826,842	9,692,694	9,427,311	8,893,895	8,551,691	8,874,430	9,329,183	105,741,960
‡Total 1931	6,579,363	5,341,790	6,745,457	5,398,491	7,893,294	6,585,273	8,132,494	7,296,117	7,291,643	8,396,680	7,539,307	13,134,141	90,834,054
‡Difference	2,667,798	2,553,883	141,327	3,857,083	967,421	2,241,568	1,560,200	2,131,193	1,602,252	155,011	1,335,123	3,804,958	15,407,905

*Not listed in monthly reports previous to June, 1932. †Not included in totals; Shell Petroleum Corp. shipments not previously listed in monthly reports. ‡Includes fractions of barrels not shown.

REFINED PRODUCTS

Company, terminal and destination—	January	February	March	April	May	June	July	August	September	October	November	December	Total
Atlantic Pipe Line Co., Atreco, coastwise	.....	.....	.....	21,902	6,838	.....	.....	.....	.....	.....	.....	3,890	32,631
Atlantic Pipe Line Co., Atreco, export	.....	.....	.....	.....	.....	.....	.....	9,483	.....	.....	.....	.....	9,483
Atlantic Pipe Line Co., Texas City, coastwise	.....	.....	.....	.....	.....	.....	.....	8,627	4,096	6,407	.....	.....	19,131
Gulf Refining Co., Port Arthur, coastwise	2,206,169	1,825,309	1,974,240	1,452,520	1,675,687	1,340,462	1,193,860	1,247,678	1,499,282	1,443,125	1,722,876	1,886,693	19,471,907
Gulf Refining Co., Port Arthur, export	107,441	120,594	3,996	152,111	2,451	170,569	7,519	18,334	201,543	18,043	53,045	7,940	863,590
Humble Oil & Ref. Co., Baytown, coastwise	1,099,089	1,082,357	1,268,191	1,132,041	1,842,543	1,161,866	1,764,119	1,199,980	1,547,152	1,977,433	2,038,095	2,236,100	18,377,877
Humble Oil & Ref. Co., Baytown, export	1,289,948	1,439,891	1,539,708	1,253,232	1,795,016	1,122,759	438,590	506,210	766,144	615,485	807,119	295,751	11,869,859
Magnolia Pet. Co., Beaumont, coastwise and export	1,840,200	1,514,501	1,894,760	2,162,703	1,571,229	1,326,450	1,416,423	1,436,883	1,289,168	1,393,470	1,326,423	1,589,592	18,759,806
Pure Oil Co., Smith's Bluff, coastwise	599,029	443,796	455,598	486,301	631,856	527,196	289,486	405,775	365,682	512,750	657,805	460,564	5,858,841
Pure Oil Co., Smith's Bluff, export	33,751	.....	166,264	256,041	9,914	.....	.....	.....	.....	35,209	.....	.....	505,180
Shell Pet. Corp., Houston, coastwise	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*8,194,797
Shell Pet. Corp., Houston, export	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*1,580,772
Standard Oil Co. (La.), Baton Rouge, coastwise	732,543	896,207	479,425	981,512	938,762	653,757	704,779	716,131	958,427	808,118	1,465,708	1,500,384	10,836,753
Standard Oil Co. (La.), Baton Rouge, export	939,557	241,273	650,735	331,348	911,918	714,094	342,979	455,572	563,720	202,588	455,455	288,607	6,097,846
The Texas Company, Port Arthur, coastwise	1,659,401	1,416,443	1,760,129	1,644,482	2,255,053	1,349,849	1,917,391	1,491,608	1,654,189	1,859,503	1,824,609	2,004,702	21,337,359
The Texas Company, Port Arthur, export	335,646	726,244	377,590	269,939	723,188	619,726	372,254	447,703	567,495	448,654	434,930	798,544	6,171,903
†Total 1932	10,881,777	9,706,619	10,583,739	10,154,036	12,358,459	9,435,724	8,446,402	7,943,937	9,419,902	9,332,786	10,785,968	11,161,778	120,301,173
†Total 1931	11,291,044	9,791,382	10,463,798	10,367,060	10,551,191	10,205,314	10,681,415	10,916,887	11,481,299	11,269,019	9,512,026	10,707,232	127,337,673
†Difference	409,266	84,763	119,940	213,023	1,807,267	770,590	2,235,013	2,972,899	2,061,396	1,936,232	1,273,942	454,546	7,036,501
†Total water shipments 1932	20,128,939	17,602,292	17,420,523	19,409,601	21,264,176	18,252,566	18,139,096	17,371,248	18,313,798	17,884,478	19,660,398	20,490,961	225,943,132
†Total water shipments 1931	17,870,407	15,133,172	17,209,255	15,765,551	18,444,486	16,790,588	18,813,909	18,213,005	18,772,941	19,665,699	17,051,334	23,841,874	217,571,738
†Difference	2,258,531	2,469,119	211,268	3,644,050	2,819,689	1,461,978	674,813	841,706	459,143	1,781,221	2,609,064	3,350,413	8,371,494

*Not included in totals; Shell Petroleum Corp. not previously listed in monthly reports. †Includes fractions of barrels not shown.

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Pump electrically with the RIGHT MOTOR and the RIGHT CONTROL

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For example, if you want a drive that will take care of your present as well as your future pumping needs, the RIGHT motor is the G-E triple-rated motor with three different horsepower ratings. It costs little more than a single-rated motor.

For stripper wells, the RIGHT driver is the G-E gear-motor — a compact, efficient, low-speed drive which provides new economies in slow-motion pumping.

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GENERAL ELECTRIC

Retail Gasoline Prices Show Marked Recovery in June Following New Low for All Times

By W. T. ZIEGENHAIN

In June substantial increases were posted in the gasoline service station prices throughout all of the United States but despite this turn, the average on July 1 was more than a cent below that of a year ago. Also, the average of the six months' period from January 1 to July 1 was the lowest in the history of the industry. About the only optimistic note that may be struck in making a resume of retail price changes over the first half of 1933 is that on June 1, they apparently reached a definite turning point and with promised government help, will work their way upward.

Effect of East Texas

This government help is expected to be in the control of crude production which has had a direct influence on retail prices in the past year. Starting early in the year a determined effort was made to hold production below that of 1932. This was done throughout January, but it became more apparent as the month passed that this would be a difficult task. Service station price changes were made at a majority of points, some upward and others downward, but the lower prices predominated. This was the result of a 25 per cent reduction in the crude price in the middle of the month. Crude production then started to increase rapidly and mounted to a new high in the week of May 13. In this four months' period from the middle of January until the middle of May, the Mid-Continent crude price remained unchanged at the lower level and gasoline service station price changes were relatively few. Although the trend was still downward, there was less than .2 cent difference in the average from February 1 to May 1.

The high rate of crude production by the middle of May could mean only one thing, namely lower prices and throughout the latter half of May and first half of June crude prices were cut almost in half and this prompted a new series of retail gasoline prices at still lower levels. By June 1 the average had gone down to an all-time low, namely 10.82 cents.

Then a change came in the middle of June which altered the outlook immediately. The Texas Railroad Commission reduced the allowable production of the field, wells were being rapidly equipped for pumping and it looked as if the East Texas Field was beginning to be removed as a menace to higher prices. In the middle of June Mid-Continent crude prices were advanced to their original level before the May cut and substantial advances were posted in the gasoline retail prices.

In that month the average filling station price figured free of taxes advanced from 10.82 cents on the first to 13.14 cents at the close. This is the most abrupt change shown in the retail market in recent years and it seemed as though the retail market had also anticipated the smaller advance in crude prices which came early in July.

Consumption Increase

However, along with the apparently improved crude price situation there was ample evidence that consumption was increasing faster than estimated early in the year, that the Federal Government was determined that basic commodity prices be advanced to a level which would restore profits and that under the National Industrial Recovery Act forms of control would be adopted in the East Texas Field, in marketing and in refining to support these higher prices.

Taking advantage of the knowledge gained since the first half of the year has elapsed we see the oil industry still producing crude almost at its peak rate in May, the major crude buyers have not been willing to meet the substantial advance in Mid-Continent crude prices posted by the relatively small buyers and the question of placing the marketing and manufacturing branches under a profitable program of operation through government supervision, is still indefinite. With the statement by one of the largest producers in the East Texas Field that it would be necessary to add pumping equipment as time goes on but that it would still essentially be a flowing field one year hence dampened the enthusiasm generated through the purchase of pumping equipment in May and June. The latter move was explained that these purchases were made simply to take advantage of a pending price advance on the equipment itself and the pumps would remain idle for an indefinite period.

It now becomes apparent that the course of the retail market over the immediate future will be dependent upon the steps to be taken by those who will apply the powers under the NIRA to the problems of the oil business.

Comparison by Areas

A direct comparison of average prices by areas is difficult because of the changing discounts allowed. The prices shown in the accompanying tables are gross, before any rebate is made for cash or quantity.

On this basis, the Central states show the greatest decline of 2.3 cents over the six months, while the Pacific Coast average shows a gain of 1.3 cents. All other areas show losses.

The Atlantic and New England states, in which more gasoline is consumed than in any other section, shows but a small decline, but early in the six-month period the general markets in that section were extremely weak.

New Gasoline Taxes

Year by year the petroleum industry has seen a mounting tax on gasoline im-

Trend of Gasoline Service Station Prices

AVERAGE SERVICE STATION PRICES IN CENTS IN 50 REPRESENTATIVE CITIES, EXCLUSIVE OF TAXES

	1928	1929	1930	1931	1932	1933
January 1	16.41	18.32	17.23	14.56	12.87	12.54
February 1	16.38	17.59	16.96	14.83	12.97	11.63
March 1	16.80	17.21	16.28	14.86	12.91	11.40
April 1	17.16	17.38	15.92	13.68	13.18	11.58
May 1	17.47	17.48	16.95	12.40	13.59	11.60
June 1	17.56	18.32	17.01	12.21	13.68	10.82
July 1	17.56	18.48	16.56	12.46	14.21	13.06
August 1	18.12	18.22	16.47	12.41	14.02	.....
September 1	18.40	18.22	16.26	12.21	13.65	.....
October 1	18.70	18.32	15.93	12.34	12.46	.....
November 1	18.05	17.84	15.41	12.32	13.04	.....
December 1	18.39	17.51	14.96	12.89	12.96	.....
Average	17.63	17.91	16.33	13.09	13.30	11.90

COMPARISON OF NET SERVICE STATION PRICES JANUARY 1, 1933, AND JULY 1, 1933, ACCORDING TO GEOGRAPHIC GROUPINGS

Atlantic and New England States

	Jan. 1	July 1
Augusta, Me.	14.3	14.0
Manchester, N. H.	14.0	11.9
Burlington, Vt.	15.0	15.2
Hartford, Conn.	14.5	14.1
Springfield, Mass.	14.5	14.3
New York, N. Y.	9.5	11.5
Philadelphia, Pa.	13.5	11.9
Providence, R. I.	12.6	13.0
Newark, N. J.	13.2	13.5
Baltimore, Md.	13.9	13.3
Dover, Del.	14.0	11.5
Average	13.5	13.0

Central

	Jan. 1	July 1
Fargo, N. D.	16.1	12.1
Huron, S. D.	14.5	11.4
Wichita, Kans.	12.9	8.1
Omaha, Neb.	12.9	12.3
Tulsa, Okla.	13.0	11.5
Dallas, Tex.	13.0	12.0
Little Rock, Ark.	12.0	13.4
Kansas City, Mo.	13.1	9.2
Des Moines, Iowa	13.4	10.1
Duluth, Minn.	14.7	10.7
Milwaukee, Wis.	13.3	9.7
Chicago, Ill.	13.1	9.6
Detroit, Mich.	9.6	10.5
Indianapolis, Ind.	13.4	10.2
Cleveland, Ohio	14.0	14.5
Average	13.2	10.9

Southeastern

	Jan. 1	July 1
Norfolk, Va.	14.0	13.4
Charleston, W. Va.	15.3	14.2
Louisville, Ky.	13.0	12.5
Memphis, Tenn.	14.5	13.6
Atlanta, Ga.	15.0	13.5
Charlotte, N. C.	16.2	15.6
Charleston, S. C.	14.0	13.4
Jackson, Miss.	13.0	13.5
Birmingham, Ala.	14.0	16.5
New Orleans, La.	14.0	13.3
Jacksonville, Fla.	13.0	12.5
Average	14.1	13.7

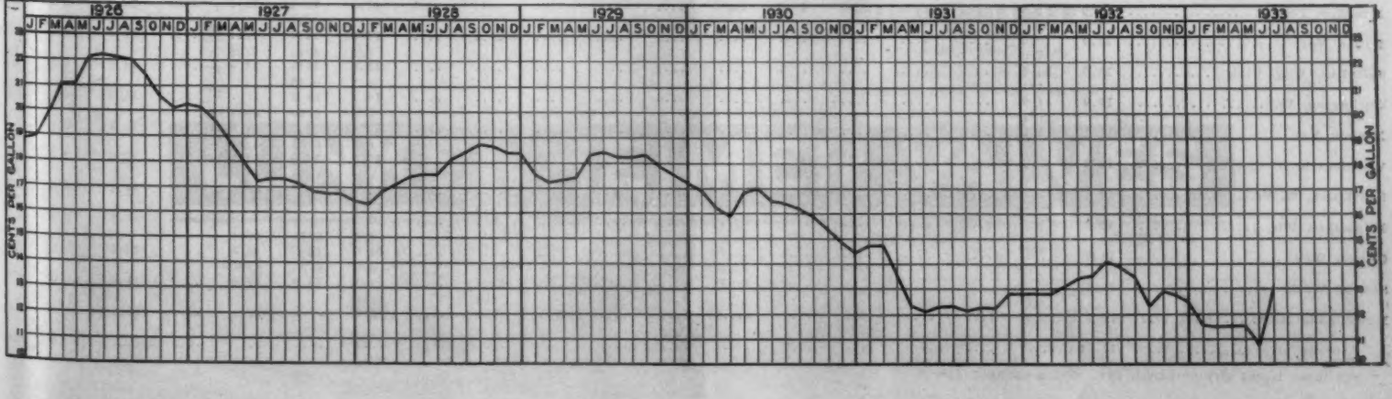
Midwestern

	Jan. 1	July 1
Helena, Mont.	19.0	15.5
Boise, Idaho	20.5	17.5
Casper, Wyo.	15.0	14.5
Reno, Nev.	19.9	17.5
Salt Lake City, Utah	19.0	14.5
Denver, Colo.	16.0	13.5
Phoenix, Ariz.	15.5	15.0
Albuquerque, N. Mex.	14.0	13.0
Average	17.3	15.5

Western Coast

	Jan. 1	July 1
San Francisco, Calif.	14.0	15.0
Portland, Ore.	15.0	17.0
Seattle, Wash.	15.0	16.0
Average	14.7	16.0

Trend of Gasoline Service Station Prices, Exclusive of Taxes, in 50 Representative Cities Throughout the United States



posed by the respective states. In June of last year a 1-cent Federal tax was imposed in order to help pay the current expenses of the Federal Government. On June 17 of this year a one-half cent tax was added to help provide for a sinking fund which would be used to retire the bonds financing the various projects coming under the Recovery Act. There were no increases in the state taxes.

The result of the additional half-cent Federal tax has been that on July 1 the average tax paid by the motorist for gasoline was raised to 5.64 cents a gallon. This is about twice as much as the refiner has received for his product at his plant so far this year. At this rate the motoring public is paying in the form of gasoline taxes in excess of $2,000,000 every day.

Gasoline Service Station Price Changes During First Six Months of 1933, Exclusive of Taxes, in 50 Representative Cities

WITH GASOLINE TAXES IN EFFECT JANUARY 1, 1933 AND JULY 1, 1933

	Price Jan. 1, 1933	Price changes in first six months														Federal and state taxes		
		January			February		March		April		May		June			Price July 1	Jan. 1	July 1
Birmingham, Ala.	14.0	1/4 13.0	1/13 12.0	1/12 11.0	2/19 9.0	....	3/23 11.0	3/28 13.0	....	....	....	....	6/19 14.5	6/21 15.5	6/28 16.5	....	16 5	*8.0	*8.5
Phoenix, Ariz.	15.5	1/14 14.0	....	....	....	....	3/28 14 0	....	....	....	5/1 14.5	5/19 14.0	6/26 15.0	....	....	....	15.0	6 0	6.5
Little Rock, Ark.	9.5	1/2 8.0	....	....	2/17 8.5	....	....	....	....	....	....	....	6/18 11.9	6/28 12.4	....	....	12.4	7.0	7.5
San Francisco, Calif.	14.0	....	....	....	....	....	3/28 13.0	....	....	....	5/1 13.5	....	6/20 14.0	6/26 15.0	....	....	15.0	4.0	4.5
Denver, Colo.	13.0	1/3 12.0	....	....	....	....	....	....	....	....	....	....	6/1 11.0	6/19 11.5	6/21 12.5	....	†13.5	5.0	5.5
Hartford, Conn.	12.5	1/4 11.5	....	....	2/4 9.5	....	3/10 11.0	3/27 12.0	4/6 13 0	....	5/15 12.6	....	6/3 12.9	6/20 13.4	6/27 13.9	....	†14.1	3.0	3.5
Dover, Del.	13.5	1/4 11.5	....	....	2/8 10.5	....	....	....	....	....	....	....	6/17 11.5	....	....	....	11.5	4.0	4.5
Jacksonville, Fla.	12.0	1/4 11.0	1/28 13.0	....	....	....	3/18 11.0	....	....	....	....	....	6/19 11.5	6/21 12.5	6/28 11 5	....	†12.5	8.0	8.5
Atlanta, Ga.	12.0	1/4 11.0	....	....	2/15 13.0	....	....	....	4/8 12.0	4/28 11.0	....	....	6/2 12.0	6/19 12.5	6/21 13.5	6/28 14.5	†13.5	7.0	7.5
Boise, Idaho	17.5	....	....	....	....	....	3/22 15 5	....	....	....	....	....	6/1 16.0	6/19 16.5	6/26 17.5	....	17.5	6.0	6.5
Peoria, Ill.	11.6	....	....	....	....	....	....	....	....	....	5/8 9.0	....	6/16 9.5	....	....	....	†10 0	4.0	4.5
Chicago, Ill.	11.1	1/3 10.1	....	....	....	....	....	....	....	....	5/8 8 6	....	6/16 9.1	....	....	....	†9.6	4.0	4.5
Indianapolis, Ind.	13.4	1/3 12.4	1/18 11.4	....	....	....	....	....	....	....	5/8 9.2	....	6/16 9.7	....	....	....	†10.2	5.0	5.5
Des Moines, Iowa	12.9	1/3 12.7	1/18 11 9	....	....	....	....	....	....	....	5/8 9.1	....	6/16 9.6	....	....	....	†10.1	4.0	4.5
Wichita, Kans.	10.9	....	1/18 9.9	....	....	....	....	....	....	....	5/8 7.1	....	6/16 7.6	....	....	....	†8 1	4.0	4.5
Louisville, Ky.	11.0	1/14 12.0	....	....	....	....	....	....	4/27 11.0	....	5/19 10.0	....	6/19 10.5	6/21 11.5	6/26 12.5	....	12 5	6.0	6.5
New Orleans, La.	9.0	1/2 8.0	....	....	2/17 8.5	....	....	....	....	....	....	....	6/2 10.8	6/21 11.3	6/28 12.3	....	12.3	*7.0	*7.5
Augusta, Me.	14.5	1/4 13.5	....	....	2/10 13.0	....	....	....	4/5 14.0	....	5/22 12.7	....	6/3 13.0	6/16 13.5	6/27 14 0	....	14.0	5.0	5.5
Baltimore, Md.	11.0	1/4 10.0	....	....	....	....	....	....	....	....	....	....	6/2 12.3	6/19 12.8	6/28 13.3	....	13.3	5.0	5.5
Springfield, Mass.	13.5	1/4 12.5	....	....	2/1 10 5	....	3/15 11.5	3/27 12.5	4/5 13.5	....	5/15 12 8	....	6/3 13.1	6/20 13.6	6/27 14.1	....	†14.3	4.0	4 5
Detroit, Mich.	11.0	....	....	....	....	....	....	....	....	....	5/8 9.5	....	6/16 10.0	....	....	....	†10.5	4.0	4.5
Duluth, Min.	14.7	1/3 13.7	1/18 12 7	....	....	....	....	....	....	....	5/8 9.7	....	6/16 10.2	....	....	....	†10.7	4.0	4.5
Jackson, Miss.	11 0	1/12 12.0	1/23 11.0	....	2/19 10.0	2/28 9.0	....	....	....	....	....	....	6/19 10.5	6/21 12.5	6/28 13 5	....	13.5	7.0	7 5
Kansas City, Mo.	11.1	1/3 10.1	....	....	....	....	....	....	....	....	5/8 8.2	....	6/16 8.7	....	....	....	†9.2	*4.0	*4.5
Helena, Mont.	19.0	1/18 18.0	....	....	....	....	....	....	....	....	....	....	6/1 16.0	6/19 16.5	6/22 17 5	....	†18.5	6.0	6.5
Omaha, Neb.	13.9	1/3 13.25	1/24 12.3	....	....	....	....	....	....	....	....	....	6/1 10.3	6/16 10.8	6/17 11.3	6/21 11.8	†12.3	5.0	5.5
Reno, Nev.	17.0	....	....	....	....	....	3/28 15.5	....	....	....	5/1 16.0	....	6/20 16.5	6/26 17.5	....	....	17.5	5.0	5.5
Newark, N. J.	11 3	1/4 10.3	....	....	....	....	3/27 8.9	....	....	....	....	....	6/2 12.4	6/12 12.9	6/28 13.5	....	13.5	4 0	4 5
Aubuquerque, N. Mex.	13 0	1/4 12.0	....	....	2/1 10.0	2/16 12.0	3/4 10.0	....	....	....	....	....	6/19 10.5	6/22 13.0	....	....	13.0	*7.0	6.5
New York, N. Y.	10.5	1/4 9.5	....	....	....	....	3/22 10.2	....	....	....	....	....	6/3 10.5	6/19 11.0	6/27 11.5	....	11.5	4.0	4.5
Charlotte, N. C.	13 3	1/4 12.3	....	....	2/6 10.3	2/24 11.3	....	....	....	....	....	....	6/2 14.6	6/19 15.1	6/28 15.6	....	15.6	7.0	7 5
Fargo, N. D.	16.1	1/3 15 1	1/18 14.1	....	....	....	....	....	....	....	5/8 11.1	....	6/16 11.6	....	....	....	†12.1	4.0	4.5
Cleveland, Ohio	10.0	1/3 9.0	....	....	....	....	3/2 10.0	3/30 11.0	....	....	....	....	6/21 14.5	....	....	....	14.5	5.0	5.5
Tulsa, Okla.	12.0	1/3 11.0	1/25 10.0	....	....	....	....	....	....	....	....	....	6/18 11.0	6/21 10 5	....	....	†11.5	5 0	5.5
Portland, Ore.	10.4	....	....	....	....	....	3/18 11.0	....	....	....	5/1 13.0	....	6/5 14.5	6/9 15.5	6/29 16.0	....	17.0	5.0	5.5
Philadelphia, Pa.	12.0	1/4 11.0	1/18 10.0	....	2/8 9.0	....	3/25 10.0	....	....	....	....	....	....	6/20 11.0	....	....	11 0	4.0	4.5
Providence, R. I.	11.5	1/4 10.5	....	....	....	....	3/27 11.5	....	4/6 12.5	....	5/15 12.2	....	6/3 12.5	6/17 12.2	6/27 13.0	....	13.0	3.0	3 5
Charleston, S. C.	11.1	1/4 10.1	....	....	....	....	....	....	....	....	....	....	6/2 12.4	6/19 12.9	6/28 13.4	....	13.4	7.0	7 5
Huron, S. D.	14.5	1/3 13.5	1/18 12.5	....	....	....	....	....	....	....	5/8 10.3	....	6/16 10.8	....	....	....	†11.4	5.0	5.5
Memphis, Tenn.	10.0	1/2 9.0	1/13 8.5	....	2/16 9 5	2/17 10.0	....	....	....	....	....	....	6/2 11.6	6/19 12.1	6/21 12 6	6/28 13 1	12.6	8.0	8.5
Dallas, Tex.	11.0	1/3 10.0	....	....	....	....	....	....	....	....	....	....	6/18 11.0	6/27 12.0	....	....	12.0	5.0	5.5
Salt Lake City, Utah	15.0	1/6 14.0	....	....	....	....	....	....	....	....	....	....	6/1 13.0	6/19 13.5	6/26 14.5	....	14.5	5.0	5.5
Burlington, Vt.	15.0	1/4 14.0	....	....	....	....	....	....	....	....	....	....	6/3 14.3	6/19 14 8	....	....	15.3	5.0	5.5
Norfolk, Va.	11.1	1/4 10.1	....	....	....	....	....	....	....	....	....	....	6/2 12.4	6/19 12 9	6/28 13 4	....	13.4	6.0	6.5
Washington, D. C.	10 2	....	....	....	....	....	....	....	....	....	....	....	6/2 12.5	6/19 13.0	6/28 13.5	....	13.5	3.0	3.5
Charleston, W. Va.	12.4	1/4 11.4	....	....	....	....	....	....	....	....	....	....	6/2 13.2	6/19 13.7	6/28 14.2	....	14.2	5.0	5.5
Milwaukee, Wis.	12.3	1/3 11.3	....	....	....	....	....	....	....	....	5/8 8.7	....	6/16 9.2	....	....	....	†9.7	5.0	5.5
Casper, Wyo.	14.0	....	....	....	....	....	....	....	....	....	....	....	6/1 12.0	6/19 12 5	6/21 13 5	....	†14 5	5.0	5.5
Seattle, Wash.	10.4	....	....	....	....	....	3/18 11.0	....	....	....	5/1 13.0	....	6/5 14.5	6/20 15.0	6/26 16.0	....	16.0	6.0	6.5
Minneapolis, Minn.	11.4	1/18 10.4	....	....	....	....	....	....	....	....	5/8 9.4	....	6/16 9.9	....	....	....	†10.4	4.0	4.5
Average price	13.54	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	5.16	5.64

*Includes 1-cent city or parish tax. †Price changed July 1.

Designed for the Modern Refinery~~~

LUNKENHEIMER Steel Valves

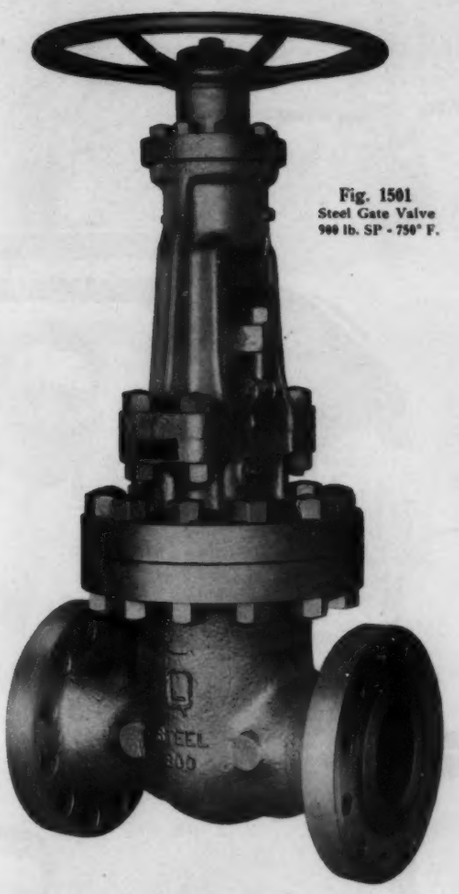


Fig. 1501
Steel Gate Valve
900 lb. SP - 750° F.

The modern refinery - carefully planned for increased efficiency, larger capacity, and higher operating pressure and temperature - demands equipment designed specifically for its needs.

Lunkenheimer Steel Valves are available in a variety of types and sizes to satisfy all present-day service requirements, at pressures from 150 up to 1500 lb. and temperatures as high as 1000° F. The line includes gate, globe and angle, swing check and piston check valves in all commercial sizes.

As no one combination of materials should be recommended for all conditions, a choice of materials as well as types is offered. Bodies and bonnets may be made of carbon or alloy steels, and trimmings of various alloys selected to suit the installation. Valves may be constructed for flanged or welded piping and equipped with motor control or gearing.

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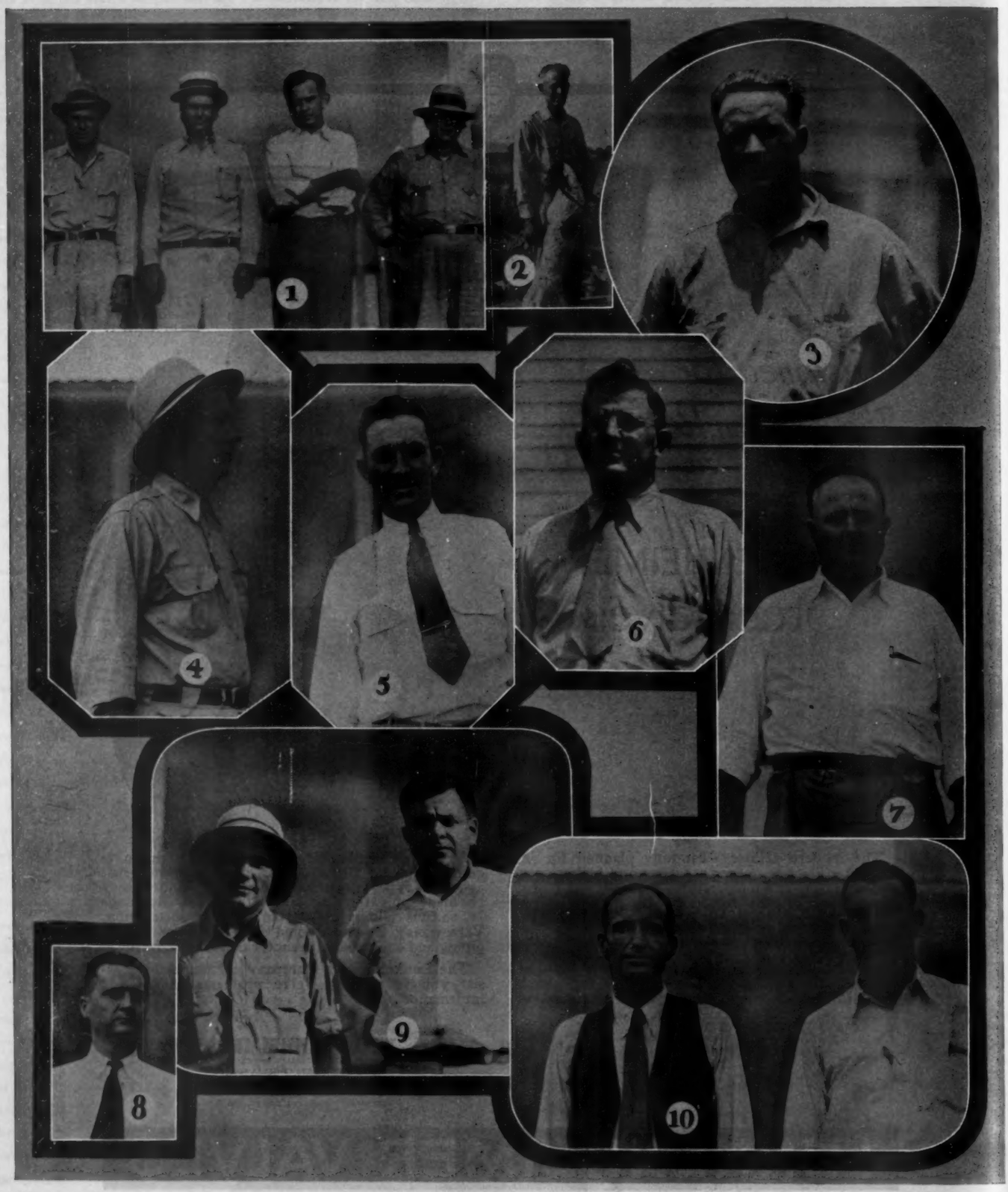
LUNKENHEIMER VALVES

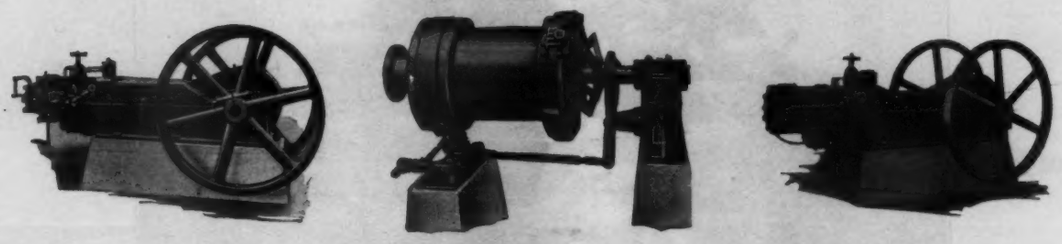
15-64-91

Solving Production Problems in East Texas Is Part of Their Daily Work



1.—Skippy Henry, rig builder; B. G. Williams, drilling foreman; J. C. Garrison, clerk; J. T. Coyle, superintendent of Kilgore area, all of the Texas Co. 2.—Nick Sherman, superintendent, Margay Oil Corp., Gladewater, Tex. 3.—A. Julian, superintendent of the south end, the Texas Co. 4.—J. T. Williams, superintendent of transportation, Gulf Production Corp. 5.—L. H. Moore, production foreman, Kilgore area, Gulf Production Co. 6.—T. R. Wade, production foreman for Kilgore area. 7.—C. L. Kay, drilling superintendent, Gulf Production Corp. 8.—F. S. Gray, chief clerk, Kilgore office, Gulf Production Corp. 9.—J. B. Ellsey, field superintendent, and C. Smith, warehouseman, of the Houston Oil Co., Kilgore, Tex. 10.—E. C. Moore, production foreman, Overton district, and I. B. Russell, Jr., production engineer, Gulf Production Corp.

BRIDGEPORT scores again!
Now A Complete Line of PUMPING EQUIPMENT



Franklin Valveless Engines and Clutches

Franklin Valveless Engines and Clutches need no introduction. They are famous for their simplicity, great power, ruggedness, economical operation and low cost of maintenance—the ideal pumping power for East Texas wells. Carried in stock by Bridgeport at Kilgore.

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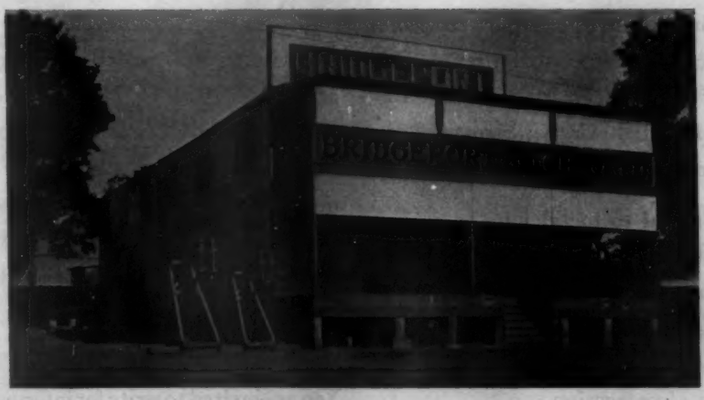

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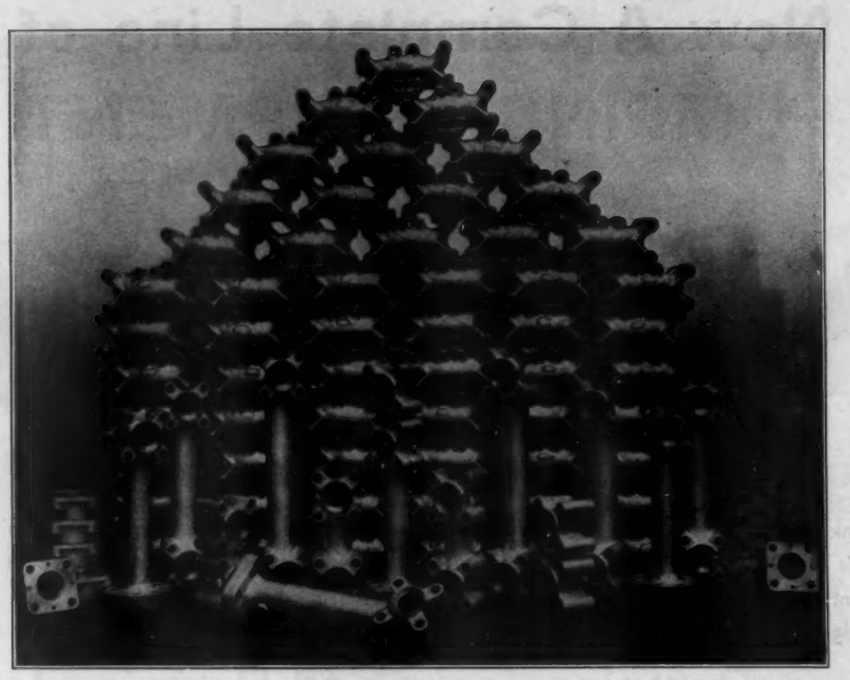

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1.—I. K. Ricketts, production superintendent for East Texas; R. S. Christie, petroleum engineer; J. S. Young, production clerk; Mark Thurman, production clerk, and Wesley Smith, material man, all of the Amerada Petroleum Corp. 2.—"Salt Water" Martin, in charge Salt Water Co., Tyler, Tex. 3.—H. B. Walker, superintendent, Galvez Oil Corp., Gladewater, Tex. 4.—M. J. Pipsaire, drilling superintendent, Mid-Kansas Oil & Gas Co., Henderson district. 5.—W. H. Taylor, superintendent of production for East Texas, Gulf Production Corp. 6.—A. W. Schofield, district superintendent of Kilgore and Longview area, Gulf Production Corp. 7.—Gene Sweeney, production superintendent for north end; F. O. Roberts, field clerk; Frank Jared, field clerk; Jimmie Dyer, field clerk, all of Sun Oil Co. 8.—S. W. Hillyer, field superintendent, Houston Oil Co. 9.—R. R. Hobson, general manager, and Frank Dunn, division superintendent of the Houston Oil Co. 10.—George Rodder, district warehouseman for East Texas, Gulf Production Corp. 11.—M. L. Brown, superintendent of production; B. M. Givens, superintendent of Joiner area, both with the Sun Oil Co., Tyler, Tex.

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District Superintendent, Production Dept.
Magnolia Petroleum Co., Longview, Tex.

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Chief Petroleum Engineer
Magnolia Petroleum Co., Kilgore, Tex.

DR. GEO. EDWIN DORSEY
Chief Geologist
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Magnolia Petroleum Co., Dallas, Tex.

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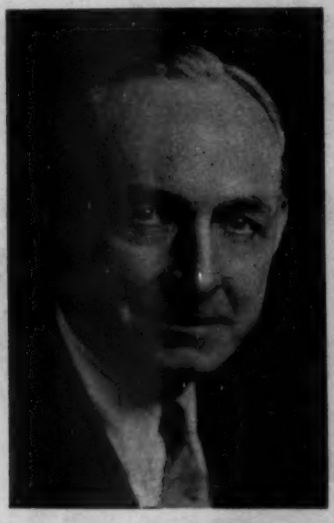
Vice President and Assistant Manager, Production Department
Magnolia Petroleum Co., Dallas, Tex.



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Sinclair Prairie Oil Co., Fort Worth, Tex.

LLOYD HOLSAPPLE
Chief Engineer, East Texas Operations
Sinclair Prairie Oil Co., Troup, Tex.

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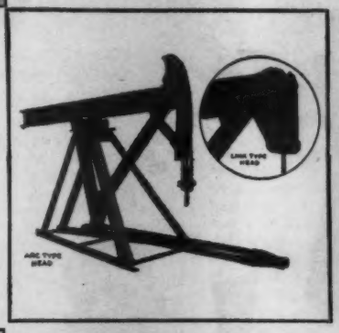

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1.—W. A. Sizemore, district foreman; H. J. Summy, district superintendent; W. C. Summy, petroleum engineer; Charles Lislie, production clerk, of the Sinclair Prairie Oil & Gas Co. 2.—Left to right: Dave Camden, assistant purchasing agent, Shreveport, La.; C. H. Stout, East Texas production superintendent; A. C. Jamison, general production superintendent, all of the Arkansas Fuel Oil Co. 3.—C. H. Duffy, superintendent of the north end; C. N. Haush, head of geological department of production, East Texas district, Gulf Production Corp. 4.—W. R. Leard, petroleum engineer; G. R. Kennedy, petroleum engineer; and M. T. Davis, superintendent of rig building of the Magnolia Petroleum Co., Kilgore, Tex. 5.—T. K. Franks, chief production clerk, and W. A. Blythe, district foreman, of the Arkansas Fuel Oil Co. 6.—T. L. Regon, district engineer, and E. J. Harmon, superintendent of production in East Texas, Stanolind Oil & Gas Co. 7.—J. P. Straight, district superintendent; C. R. Webb, petroleum engineer; G. E. Goddard, divisional superintendent; F. A. Lawrence, district superintendent, all of the Empire Oil & Refining Co.

Gasoline Price Cutters on Pacific Coast Caused Low Crude Oil Prices and Bad Half Year

By L. P. STOCKMAN
Staff Correspondent, California Fields

Unfavorable marketing conditions, especially because of ruinous gasoline prices in the Pacific Northwest, and a drastic reduction in crude oil prices March 5, resulted in severe financial losses to California producers and refiners during the first months of the current year, and this instability was a dominating influence in general conditions. The marketing situation on the Pacific Coast cleared up during the latter part of May and a further subsequent improvement led a partial restoration of crude oil prices on June 26. Impressed by this fundamental improvement, California operators are looking forward to the second half-year with confidence and a hope that application of the Industrial Recovery Act will prove beneficial and become a stabilizing factor of considerable importance. Crude oil production during the entire first half of the year was consistently in excess of the established allowable and marketers were consequently obliged to move crude and refined oil at or below cost in order to alleviate conditions and thus prevent stocks from piling up. Most of the export shipments to Japan and a large part of the gasoline moved to the Atlantic Coast represented a loss, especially where California marketers increased stocks of residuum, which has been a drug on the market for a long time, or disposed of this commodity for 50 or 60 cents per barrel.

Crude oil production in California during the first six months of 1933, despite the consistent excess above the established allowable, was the lowest for any similar period since 1922, when production aggregated 61,092,778 bbls. for the first half year, 78,534,098 bbls. for the second half and 139,626,876 bbls. for the entire year.

Mountain View

The Mountain View Field of Kern County became a recognized entity in May, 1933, when Dana Hogan finished No. 1 Wharton as a commercial producer. The existence of an oil field at Mountain View has been more or less generally recognized in view of exploration work undertaken by the Shell Oil Co. in that area some two or three years ago. The Shell, however, failed to develop sustained production and the field therefore remained as a theoretical possibility. No. 1 Porter Day of the Shell showed enough on a preliminary production test to justify the expectation of a substantial accumulation, as this well came in flowing at the rate of approximately 2,000 bbls. per day. The Shell, due to its large holdings, killed No. 1 Day and resumed drilling in order to ascertain the possible existence of deeper production. The company found oil sand in the bottom of the hole but this did not result in commercial production and the company accordingly plugged back in an attempt to recomplete the well in the first sand found in the Santa Margarita. This attempt proved unsuccessful and the area remained more or less quiet until Dana Hogan started drilling operations on the Wharton property.

The Mountain View Field is located approximately 10 miles southeast of the business district of Bakersfield, 6 miles northwest of Arvin and about 5 miles due south of Edison. The field is one of three topographic highs on the Bear Mountain fault zone but, unlike Los Angeles Basin fields on the Newport Beverley fault zone where the topography is very pronounced, surface indications in the Mountain View Field are almost negligible.

Dana Hogan's discovery well in the Mountain View Field is producing from the Santa Margarita but there is a possibility that subsequent development may prove up both the Santa Margarita and the lower part of the Kern River series as commercially productive. In the San Joaquin Valley, the Kern River group includes the Tulare of lower Pleistocene, Etchegoin and Jacalitos of Pliocene Age, while formations of the underlying Miocene Age include Santa Margarita, Monterey, Temblor and Vaqueros. The Kreyenhagen in this section of the State is either lower Oligocene or upper Eocene, while the Tejon formation is usually located within the Eocene Age.

PRODUCTION OF CRUDE BY MONTHS—CALIFORNIA OIL DISTRICTS
(Barrels of 42 U. S. gallons)

Month—	1932 Total barrels	1932 Daily average	1933 Total barrels	1933 Daily average
January	14,460,282	466,461	15,532,141	501,037
February	13,107,043	468,109	14,616,862	504,030
March	13,414,980	432,741	15,576,915	502,449
April	14,262,943	475,431	15,524,444	517,481
May	14,817,633	477,988	15,575,741	502,443
June	14,344,654	478,155	14,118,970	470,632
Total first half	84,407,535	466,340	90,944,073	499,679

Many Pools of Stable Production

The production of most California fields was approximately the same during the first six months of 1932 and 1933. There were several exceptions to this rule, namely, Santa Fe Springs, Playa Del Rey, Long Beach and Huntington Beach. Elwood, due to decreased drilling and normal decline, was approximately 500,000 bbls. lower in the first six months of 1933 than was the case during the similar period in 1932. Dominguez and Inglewood were down about 400,000 due to decreased development and normal decline in the productive formation. Montebello, due to curtailment and a normal decline, showed a somewhat lower production during the first six months of 1933, while San Miguelito was about 100,000 bbls. higher due to the deepening and subsequently larger production of the Continental Oil Co.'s No. 1 Grubb. Santa Fe Springs showed the largest decline during the first half of the current year, as production was approximately 2,000,000 bbls. less, due to depletion, than during the similar period last year. Long Beach production, due to the same reaction, was approximately 1,500,000 bbls. below the field's output for the first six months of 1932. Playa Del Rey also showed a relatively large decline in production, as the field's output during the first six months of 1933 was about 1,000,000 bbls. lower than the output during the comparable period last year. This decrease is attributable to normal decline and to the fact that the town lot area will not sustain any further drilling. The Union and Ohio will have some undeveloped acreage, but these companies, now that peak production has been passed, have refrained from drilling inside locations. This will undoubtedly result in a lower production per acre due to depletion of gas by overdrilling in the town lot area, but at the same time this deficiency will probably be adequately compensated for by a higher price when the inside locations are drilled up. Huntington Beach, which has probably had more ups and downs than any other Los Angeles Basin field, showed a higher production during the first half of 1933 than was the case during the first six months of 1932. This field, reflecting renewed intensive drilling in the Seventeenth Street town lot area, registered an increase in production of approximately 1,000,000 bbls. over the first six months of 1932. Development work in the Huntington Beach town lot area is not the result of any new discovery but is rather attributed to the fact that operators by whipstocking wells or drilling crooked holes are enabled to intercept heretofore undeveloped acreage or tideland property.

Kettleman Hills

The Kettleman Middle Dome, which officially became a new field in April, 1932, was removed from the doubtful class in April, 1933, when the Standard Oil Co.'s well No. 6-29 V was successfully completed as a commercial producer. This well, on a preliminary production test during April and May, 1932, produced 6,687 bbls. and 3,850 bbls., respectively. The well was killed early in May, 1932, in order that the hole might be drilled ahead as the Petroleum Securities had revealed the existence of a better zone a little deeper. As a consequence of this decision, no oil was produced between May, 1932, and April, 1933. The Standard Oil Co.'s No. 6-29 V, the first commercial producer finished in the Kettleman Middle Dome Field, was recompleted in the lower zone at 8,406 feet and brought in flowing 1,250 bbls. of exceptionally clean 53.1 gravity oil and approximately 30,000,000 feet of natural gas per day.

Operators in the Kettleman North Dome Field experienced considerable water trouble during the first half of the current year for the first time. This was due more to mechanical trouble, however, and should not be construed as indicative of the possibility that the field has gone to water. This is evidenced by the fact that the Superior Oil Co. successfully overcame the troublesome water condition which delayed completion of No. 6 Huffman. There is no questioning the fact that edgewater has apparently fingered in at the corner of Sections 35 and 36-21s-17e and Sections 1 and 2-22s-17e, as three wells in this immediate area are showing unusually high cuts. No. 1 Dixon of the Shell in Section 36-21-17 is cutting approximately 20 per cent emulsion, while the Associated's Nos. 1 and 2 on the Whepley lease in Section 35-21-17 are cutting 6 per cent and 35 per cent, respectively. The Associated recently

PRODUCTION OF CRUDE BY DISTRICTS, JANUARY TO JUNE, INCLUSIVE, 1933

Districts—Northern Fields—	January	February	March	April	May	June	Total	Daily
Coalinga	338,359	296,654	327,275	314,148	339,064	322,463	1,937,993	10,707
Elk Hills	376,574	361,894	394,647	386,196	390,489	380,231	2,290,031	12,652
Fruitvale	144,607	141,047	156,592	147,191	153,079	138,740	881,256	4,868
Kern River	269,647	252,613	272,990	263,071	268,438	271,543	1,598,302	8,830
Kettleman North Dome	1,794,516	1,610,728	1,845,562	1,787,599	1,893,947	1,841,233	10,773,585	59,522
Kettleman Middle Dome	.....	.....	.....	9,128	26,462	13,326	48,916	270
Lost Hills-Belridge	279,807	261,714	291,248	272,825	288,253	222,847	1,616,194	8,929
McKittrick	54,021	48,760	53,540	50,811	53,955	51,692	311,779	1,723
Midway-Sunset	1,486,925	1,325,453	1,468,791	1,411,176	1,453,637	1,386,041	8,532,023	47,138
Mountain View	.....	.....	.....	.....	25,555	23,653	49,208	272
Mount Poso	241,279	229,336	273,110	239,426	258,897	238,360	1,480,408	8,179
Round Mountain	70,479	61,398	93,042	89,773	88,223	80,873	503,788	2,783
Wheeler Ridge	14,522	13,299	14,149	14,178	14,943	14,172	85,263	471
Coastal Fields—								
Capitan	.....	.....	915	430	541	368	2,304	13
Elwood	421,506	376,949	414,928	382,802	415,103	408,219	2,419,507	13,368
Rincon	65,230	57,790	62,458	60,545	60,092	56,676	362,791	2,004
San Miguelito	29,075	27,073	31,842	32,295	35,348	34,684	190,317	1,051
Santa Barbara	13,002	13,686	21,718	20,429	26,531	25,761	126,127	697
Santa Maria	52,363	77,916	89,380	82,860	77,483	73,045	483,047	2,669
Summerland	3,005	2,824	3,101	2,563	2,050	3,027	16,600	92
Ventura Avenue	1,132,807	1,044,190	1,123,484	976,187	1,012,023	992,258	6,280,949	34,701
Ventura-Newhall	94,971	88,027	99,317	96,747	101,964	97,554	578,580	3,197
Watsonville	1,937	1,750	1,887	1,725	1,860	1,800	10,959	61
Southern Fields—								
Coyote	302,629	276,287	286,279	340,001	308,331	300,240	1,763,767	9,745
Dominguez	568,885	506,278	595,010	548,242	607,449	571,602	3,197,466	17,666
Fullerton (Brea Olinda)	238,191	217,615	213,072	231,365	231,300	224,627	1,355,170	7,487
Huntington Beach	798,346	713,884	641,386	834,453	803,219	919,471	4,810,759	26,579
Inglewood	378,353	339,469	304,001	384,808	372,630	355,875	2,135,136	11,796
Lawndale	7,674	7,480	8,242	7,652	6,815	6,990	44,853	248
Long Beach	2,125,392	1,962,927	1,924,747	2,211,282	2,271,496	2,236,377	12,732,221	70,343
Los Angeles-Salt Lake	27,305	25,761	24,684	26,434	26,494	27,254	157,932	873
Montebello	145,165	131,828	125,738	160,116	149,426	141,298	853,570	4,715
Newport	.....	.....	.....	.....	.....	.....	.....	.....
Playa Del Rey	397,026	345,403	348,137	363,065	368,118	349,808	2,171,557	11,998
Potrero	18,040	16,068	14,173	12,558	10,917	8,511	80,867	447
Richfield	181,786	172,805	157,823	196,043	195,877	192,876	1,099,309	6,074
Rosecrans	91,466	83,867	71,391	93,329	98,267	91,684	529,904	2,927
Santa Fe Springs	1,694,144	1,471,736	1,509,181	1,617,923	1,669,151	1,619,610	9,581,745	52,938
Seal Beach	346,980	311,178	195,081	373,591	379,372	392,751	1,998,953	11,044
Torrance	189,604	175,355	179,350	187,403	193,793	191,029	1,116,434	6,168
Whittier	34,664	30,971	28,909	33,723	33,912	35,777	197,956	1,094
Total	14,460,282	13,107,043	13,414,980	14,262,943	14,817,633	14,344,654	84,407,535	466,340

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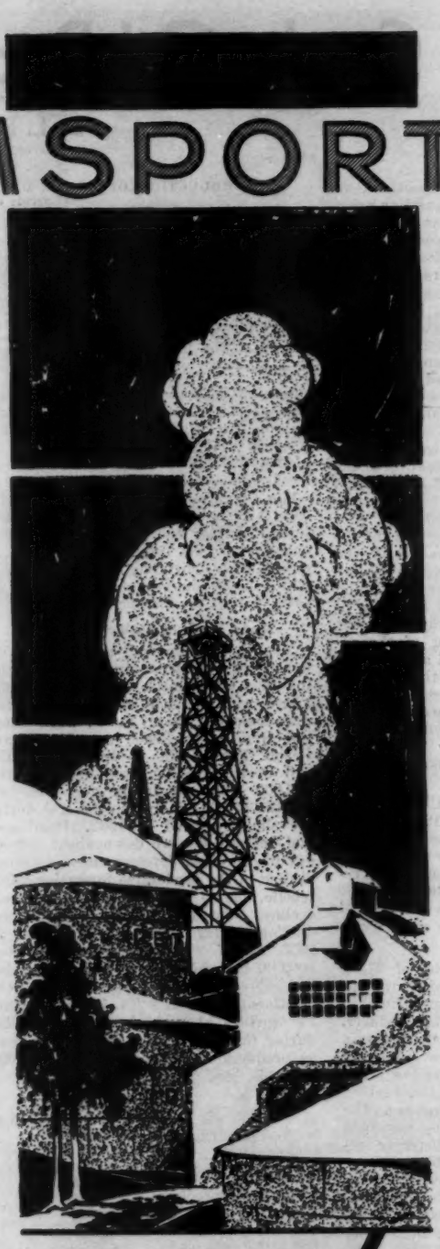

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killed No. 3 Whepley due to the inability to reduce the water cut, approximating 75 per cent. Water in this well, however, has been located at 7,550-7,775 feet, or about 600 feet below the shoe of the 9-inch water string landed and cemented at 7,107 feet. It is quite likely that the company will land a new string of casing below the source of water and may consequently overcome the water problem. A similar procedure may also be productive in Nos. 1 and 2 on the Whepley lease of satisfactory results as the shutoff was effective in these wells at 6,960 and 7,073 feet, respectively. Further indication of edgewater encroachment in the upper part of the Ochsner zone in this area is evidenced by Kenda's difficulty with water in well No. 21-1 P, located in Section 1-22-17. This project was bottomed at 8,997 feet but subsequently plugged back to 8,805 feet and then to 8,743 feet when the first plug proved ineffective. It is significant to note in contrast with this water trouble that the North American's No. 1 Signal, less favorably located with respect to structure, is still clean. This may be due to the fact that the water string on this job was effected by cementing through perforations at 9,133 feet, in the lower part of the Ochsner zone. All three of the producing wells on the Felix lease of the Petroleum Securities are still clean, but this may be due to the fact that the wells in question are a little more more favorably located with respect to the axis of the structure. Up to the present time no evidence of edgewater encroachment has been manifested in the Huffman area, located in the extreme western end of the structure. The vast amount of undeveloped acreage in the Kettleman North Dome Field renders edgewater encroachment as of minor consequence, especially in view of the fact that the underlying Eocene will probably ultimately be found productive in this field. The most disturbing factor, and this of course is conducive to edgewater encroachment around the edge of the structure, is the apparent depletion of natural gas in the Ochsner or Huffman zone. In order to compensate for this, the Kettleman North Dome Association has been taking gas from the upper, or Elliott high pressure gas zone, and injecting this gas into the underlying Ochsner zone. This phase of work is of particular interest because of the fact that there has been no abnormal waste of natural gas in the Kettleman North Dome Field up to the present time. It is worth noting, however, even though the underlying Eocene is expected to be a prolific producer of natural gas and upon development will have a sufficient excess of gas to permit reinjection into the Ochsner zone.

Lost Hills-Belridge

Production of the Lost Hills-Belridge fields during the first six months of 1933 was on about a par with the output during the first half of 1932 when this group of fields showed an output of 1,673,776 bbls. The relative stability of production in this area can be attributed to the fact that operators in the North Belridge Field have effected a gentlemen's agreement to refrain from deep zone exploitation until conditions improve, or the agreement is mutually dissolved. In addition to refraining from developing the Eocene, which has proved up as highly productive in the North Belridge Field, operators have conscientiously observed curtailment obligations in a commendable manner. Two wells have been finished in the Eocene at North Belridge up to the present time. One of these, the discovery well of the Belridge Oil Co., has been shut in and will remain in this status until conditions change. The second completion in the productive formation of Eocene age in the North Belridge Field is the Ohio Oil Co.'s No. 1 Bloemer, which, in conformity with the production agreement, has been beaned back to approximately 300 bbls. per day.

Field Operations

The number of new wells completed in California during the first six months of 1933 was slightly lower than the number finished during the first half of 1932, but the aggregate initial daily production of new wells, however, was substantially higher due to prolific completions in the Kettleman North Dome Field and other areas showing flush or semiflush production. Drilling operations as a whole during the first half of 1933 were slightly lower than the amount of work undertaken during the corresponding period last year, but drilling showed a substantial improvement in May and June, 1933, which indicates a somewhat higher average during the balance of the year. The number of new rigs erected supports this evidence and tends to indicate an increase in new drilling during the last half of the current year.

The Coal Oil Point district of Santa Barbara County was definitely eliminated as a possible oil field when the Doyle Petroleum abandoned a deep test on the Bolsa Chica's tideland permit No. 191. The Bolsa Chica company drilled the first test on this permit a few years ago but failed to develop commercial production in the Vaqueros formation. The Superior Oil Co. subsequently entered the picture and carried this hole down into the Sespe with unfavorable results. The Superior relinquished its interest in the well and the William P. Andrews Oil Co. took over the hole and after plugging back attempted to develop production in the Vaqueros by perforating the casing. This proved unsuccessful and the property stood idle for several months until the Doyle Petroleum began work which ultimately resulted in an abandonment.

In the San Joaquin Valley the Standard Oil Co. abandoned No. 1 Mascot as a failure. The Standard resumed drilling operations July 1, 1932, following a suspension of 18 months, and although a concerted attempt was made to stimulate production, the well failed to respond with the result that the hole was abandoned early this year after being plugged back and tested out by stages. Drilling operations during the course of the next six months are expected to be centered in the San Joaquin Valley for the reason that this area offers the most attractive possibilities. The Western Gulf has already located a well in the area north of Coalinga, where the company has leased approximately 102,000 acres and an early test is anticipated. The Ohio Oil Co. has leased a block of acreage in the Buena Vista Lake area of Kern County and an early test in this area is also anticipated. Buena Vista Lake is a natural drainage area from nearby elevations, but due to subnormal rainfall during the past few years has been practically dry. The Ohio has conducted some geophysical exploration in the Buena Vista Lake region of the San Joaquin Valley and may possibly have found some evidence of structure. This type of work has not proved especially productive in California up to the present time and the outcome of this work will therefore prove of considerable interest.

TOTAL FLUID STOCKS OF PETROLEUM HELD IN PACIFIC COAST TERRITORY

(Barrels)

1933—	Heavy crude and fuel	Refinable crude	Gasoline	Naphtha distillates	All other stocks	Total all stocks
January 31	99,796,706	39,339,180	15,726,068	4,842,144	6,813,386	166,416,484
February 28	99,060,172	39,867,508	15,538,326	4,734,357	6,704,676	165,906,039
March 31	98,795,332	39,913,999	15,601,372	4,482,681	6,819,043	165,612,328
April 30	99,973,713	39,478,710	15,287,516	3,987,584	6,850,535	165,578,108
May 31	99,975,789	38,650,916	15,072,936	4,399,335	7,226,558	165,326,528
June 30	100,492,854	37,504,810	14,790,506	4,004,974	7,386,169	164,179,313

CALIFORNIA FIELD OPERATIONS BY DISTRICTS FOR FIRST HALF 1933

	Oil wells comp.		Oil wells*		Abandoned		New
Northern—	No.	Bbls. dly.	Drlg.	Prod'ng	Drlrs.	Prodrs.	rigs
Buttonwillow Gas Field	2	Gas	1	1	1	...	2
Coalinga	...	.....	...	643	...	5	...
Dudley Ridge Gas Field	...	.....	1	...	2	...	2
Elk Hills	...	.....	...	194	...	...	...
Fruitvale	5	1,638	3	53	1	...	7
Kern River	...	.....	1	953	1	2	2
Kettleman Middle Dome	...	.....	...	1	...	...	...
Kettleman North Dome	7	32,108	13	37	...	...	9
Lost Hills-Belridge	3	7,896	2	144	...	...	4
McKittrick	...	.....	...	115	...	...	...
Midway-Sunset	4	631	1	1,759	1	14	6
Mountain View	1	2,700	1	...	...	...	4
Mount Poso	5	3,461	2	97	2	...	5
Round Mountain	4	903	1	22	...	...	3
Wheeler Ridge	...	.....	...	34	...	...	...
Total	31	49,387	25	4,053	8	19	44
Coastal—							
Capitan	...	.....	...	1	...	...	...
Elwood	1	415	1	43	...	...	3
Goleta Gas Field	...	.....	...	...	...	...	1
Rincon	1	100	1	34	...	...	...
San Miguelito	...	.....	2	2	...	...	2
Santa Barbara	3	475	1	9	1	...	7
Santa Maria	...	.....	...	162	1	...	...
Summerland	...	.....	...	63	...	1	...
Ventura Avenue	5	6,216	5	156	...	...	4
Ventura-Newhall	4	355	11	438	6	6	2
Watsonville	...	.....	...	7	...	...	...
Total	14	7,561	21	915	8	7	19
Southern—							
Coyote	2	2,728	2	87	1	...	2
Dominguez	5	5,522	3	58	1	1	7
Fullerton	...	.....	...	356	...	...	...
Huntington Beach	6	6,481	4	292	...	7	11
Inglewood	...	.....	1	216	...	...	...
Lawndale	1	50	...	7	...	...	1
Long Beach	21	5,628	21	957	3	10	19
Los Angeles-Salt Lake	...	.....	...	189	...	56	...
Montebello	...	.....	1	154	...	...	1
Newport	...	.....	...	...	...	...	...
Playa Del Rey	4	401	2	197	5	18	3
Potrero	...	.....	...	12	2	1	...
Richfield	1	220	...	161	...	2	4
Rosecrans	...	.....	1	63	...	...	...
Santa Fe Springs	...	.....	...	511	2	3	...
Seal Beach	...	.....	...	104	...	3	...
Torrance	...	.....	...	383	...	2	...
Whittier	...	.....	...	139	...	1	...
Miscellaneous	...	.....	26	...	32	...	18
Total	40	21,030	61	3,986	46	194	66
State total	85	77,978	107	8,954	62	130	129

*Monthly average.

FIELD OPERATIONS BY MONTHS FOR FIRST HALF 1933

	Wells completed		Wells		Abandoned		New
1933—	No.	Bbls. dly.	Drlg.	Prod'ng	Drlrs.	Prodrs.	rigs
January	12	6,282	98	8,943	9	23	17
February	19	17,109	117	8,953	6	27	23
March	10	9,393	108	8,940	6	8	13
April	14	22,315	104	8,912	16	36	22
May	19	17,405	103	9,023	14	12	37
June	11	5,374	114	8,949	11	24	27
Total first half year 1933	85	77,978			62	130	139
Total first half year 1932	95	63,235			114	84	112
Total first half year 1931	167	188,750			110	90	150
Total first half year 1930	379	297,950			143	161	431
Total first half year 1929	473	706,362			134	135	765

Bradford Crude May Be Shipped to Pittsburgh

OIL CITY, Pa., July 22.—The Derrick says a considerable movement of Bradford crude to the Pittsburgh district is anticipated in the near future and will bring about a new channel of transportation and commerce in the Pennsylvania Grade industry.

The National Transit Co. has filed a joint tariff with Southwest Pennsylvania Pipe Lines for movement of Pennsylvania crude to Neville Island, at a tariff of 18.75 cents per barrel to become effective August 1. This is 11¼ cents lower than the current tariff and indicates that some business must be anticipated. The plant of the Gulf Oil Corp. is located at Neville Island and producers have reasons to believe that some large Bradford producing interests have closed a crude contract with the Gulf for supplying them with crude from the Bradford area.

Rumors have gone so far as to mention that a five-year contract has been secured and for 1,500 bbls. daily movement.

OIL WORKERS CAUTIONED

Drillers, tool dressers and other oil workers are cautioned against going to the Bradford or Allegany Fields, in northern Pennsylvania and southwestern New York in the hope of finding work. While there has been a revival of operations in these districts, there are yet many skilled oil workers living there who have not yet been provided with jobs. Recently men have gone to Bradford from West Virginia and Ohio and have been turned away, and letters have been received from as far away as Wyoming. In some way the word got out that the drilling boom had resumed in the two big fields. A few years ago when crude was selling at $4.50 per barrel several hundred strings of tools were running in the two fields drilling water intake wells and oil wells. The bottom fell out of the market and the field has been produced under curtailment ever since and little drilling has been done.

ADOPT NAMES FOR FIELDS

The San Antonio Geological Society has adopted the following names for recently discovered oil fields in Southwest Texas: North Dale for the Ogden and Reed area in southwestern Bastrop County; North Kohler for the Shasta-Peters area of west central Duval County; Cuevitas for the Sun area in northwest Starr County; Greta for north central Refugio County; and Raisin for the Stoneleigh area of west central Victoria County.

DEATH OF C. W. HANFORD

NEW YORK, July 22.—Charles W. Hanford, for the past 20 years associated with the Ingersoll-Rand Co. and well known in petroleum engineering circles, died suddenly here this week of a cerebral hemorrhage at his home, 65 East Fifty-third Street, at the age of 59. Born in Chicago, Mr. Hanford was graduated from Harvard in 1897, and entered the employ of the Pennsylvania Railroad. He later was associated with Spang-Chalfant & Co. before becoming identified with the Ingersoll-Rand organisation.

DEATH OF A. F. MILLAN

A. F. Millan, formerly a supply man, contractor and oil producer at Mannington, W. Va., died at Tampico, Mexico, July 14, where interment was made. Mr. Millan had been associated with Pritchard Supply Co. at Mannington and later with Oil Well Supply Co. at Tampico. He retired from active participation in the oil business about five years ago. He was a veteran of the Spanish-American War, having attained the rank of captain; was past president of the American Chamber of Commerce, of the Colonial Club and of the American School Association at Tampico. He had been ill health for more than a year. Mr. Millan was about 65 years of age and is survived by his wife and his son, Franklin, of Detroit, Mich.

DISTRIBUTE

WORLD'S FAIR INFORMATION BUREAU

MOTOR TO THE ORLD'S FAIR

An automobile trip to the World's air will cost 1¾ cents a mile for gas- oline, lubricating oil and greasing jobs, -third of a cent a mile for each person five in the car.

t housing and parking facilities are avail- nd on the outskirts of, Chicago. en major Federal or state highways, all radiating in all directions from Chicago, been designated as official f's Fair routes. Each of these arked for a distance of 75 miles a Chicago with a gayly colored a, symbolic of one of the major hibits at the Exposition. The map ows routes and markings.

Official Information On each of these official routes, 20 miles from Chicago, is an attrac- tive booth marked "Official Infor- mation Booth." Here the visitor may obtain direc- tions on how to reach any point in Chicago as well as all information regarding living accommodations and rates in the city.

If the motorist plans to stop at a motor village all information will be given him as to locations, prices, etc. When he reaches the village he will find clean and sanitary accommodations at a rate approximating $1 a day per person.

Provision has been made for parking cars under guard, for cooking facilities, baths and supervised playgrounds for children.

Motor Villages Chicago is encircled by a ring of mo- tor villages. Those meeting require- ments of the Exposition bear a blue and white badge marked "Motor Village Approved by A Century of Progress, Chicago." These villages will accommodate as high as 5,000 persons per night each. The largest are arranged in form of apart- ment buildings, each apartment with private bath, toilet and lavatory. They have every hotel facility and convenience, being completely furnished and cleaned daily and all linens changed daily. Rapid transportation facilities are available from these villages to gates of the Fair. They have fire and police protection. The Chicago Motor Club, 66 East South Water St., Chicago, has a list of all motor villages with detailed information as to service and facilities of each.

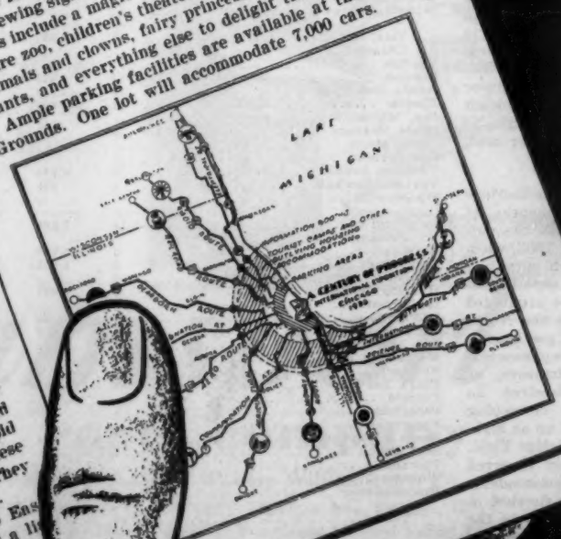
Rooms in hotels range from $1.50 to $5 per day. Rooms in private homes, boarding houses and resi- dential hotels average $1 to $2 per night single, and $1 to $3 double.

There are not any special restrictions on automo- bile drivers in Chicago. All out-of-state licenses are recognized and no licenses for drivers are required of visitors.

Charges at the Fair Admission to the Fair Grounds is 50 cents for adults, 25 cents for children. This admission covers 85 per cent of the $25,000,000 represented in the Exposition ex- hibits, and includes 85 exhibitions buildings and 82 miles of exhibits.

Admission to the concessions or amusements—60 in number—ranges from 10 to 50 cents apiece. Meals are obtainable in the Fair Grounds with sandwiches costing 5 and 10 cents each.

Never have such elaborate arrangements been made for caring for children. A 5-acre tract called En- chanted Island, or official children's playground, is a veritable story-book fairyland with nurses and attendants to care for children while the parents are viewing sights of the Fair. Amuse- ments include a magic mountain, min- iature zoo, children's theater, trained animals and clowns, fairy princesses, giants, and everything else to delight the youngster. Ample parking facilities are available at the Fair Grounds. One lot will accommodate 7,000 cars.



THIS FOLDER

Display this Sign - at Your Stations . . .

The response of oil companies to the plea for a "Motor-to-Chicago" drive has become national in scope. A few weeks ago the railroads had the field to themselves. Today many leading oil companies are aggressively doing their part towards popularizing the idea of driving to Chicago by automobile.

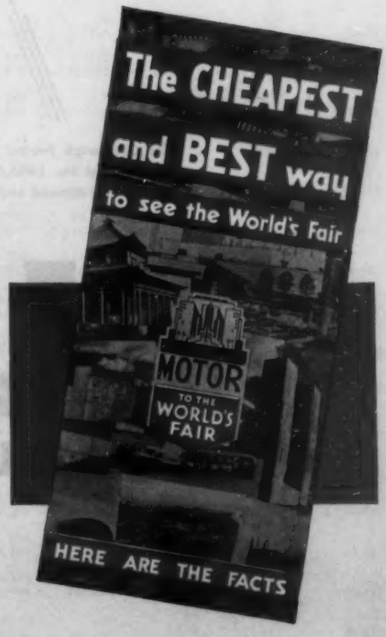
For the industry to fail to develop this opportunity to the utmost would be nothing short of willful blindness and folly. A check made last month on one highway leading into Chicago showed an increase of out-of-state automobiles, as compared with June a year ago, of nearly 400%. And consumption of gasoline in the United States last month increased 1,662,000 barrels over June, 1932.

These two facts are related. But this is only a start.

We have made it as simple as A. B. C.'s, for you to take part in this campaign. If you will simply order the station sign and information folder shown here and begin distribution of this folder through your stations, you will then be doing your part in an effective way. We have just filled a single order for 2,000,000 of these folders, and an oil company executive of international reputation writes us:

> "You are to be commended on your initiative in taking up the cause on behalf of the oil industry as a whole, and I think the effort deserves the co-operation of the various marketing companies. We are heartily in sympathy with the idea and are willing to further the program by distributing the leaflets you are preparing and by hanging the posters at our service stations."

We are at your service in this matter. Write us and we will be glad to advise you fully of the assistance we are prepared to render.



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*The Coubrough Process is covered by U. S. Patent No. 1,905,156 and other patents allowed and pending.

LUMMUS

PETROLEUM REFINING PLANTS

Important Discoveries in Gulf Coast Area Mark First Six Months' Work in That Big Region

By NEIL WILLIAMS
Staff Correspondent, Gulf Coast Fields

The intensive exploratory and wildcatting play which began on the Gulf Coast with the opening of the Conroe Field late in 1931 and gained impetus during 1932 has indicated no abatement this year. On the other hand, the activity, which has drawn many companies and operators, both large and small, from all parts of the country, has become even more widespread. Additional new fields have been opened; many other prospective areas have been exploited and further possibilities have been brought to light for potential crude reserves of the future. Out of this the groundwork has been laid for a drilling program of wide scope which is expected to be carried on over several years to come.

What was done on the Gulf Coast during the first six months of this year can be summarized as follows:

1. Hundreds of thousands of acres of prospective oil land were leased in the most competitive general play ever witnessed.

2. Geophysical operations were carried on over a wide territory not only in the rechecking of many of the older fields and prospects but also in the search for other domes or structures which may previously have been passed over in the light of less efficient instruments or lack of proper interpretation of findings.

3. The Conroe Field reached the peak of its development after the proving up of a productive area of approximately 15,000 acres, now fairly well defined on all sides. The field, which gave prominence to the Cockfield horizon and proved the incentive for one of the greatest trend plays on record, has not been equaled to date on the coast for size, potential recovery or desirability of crude and conditions.

Three New Fields Opened

4. Three entirely new fields were opened. Two of these, Tomball and Greta, have indications of becoming of major importance. Each is in its infancy so far as development is concerned but intensive drilling programs are obligated and outlined for them. The third new field, known as Colita, is located in Victoria County, and is typical of most of the other fields which have been opened in that part of the coastal district. Little can be said of it at this time as only one well, a wet gasser, has been completed and it has been shut in, and no new drilling has been started. It is on a controlled block of approximately 4,000 acres and offers little in the way of competitive drilling.

5. Indications of production and the opening of additional new fields were shown in a half dozen other areas, among which were Pure Oil Co.'s prospect at Louise and Shell Petroleum Corp.'s prospect at Lake View, both in Wharton County. At East Stratton Ridge, Brazoria County, a thousand-barrel well was brought in by Amerada Petroleum Corp. and Rycade Oil Corp., but this went to water. At Carlos, Grimes County, a small gasser was completed, the first production in the county, but this also showed water and the well has been killed to deepen. A short-lived gasser was completed on the Nursery block in northern Victoria County, where several years ago some oil was swabbed from a deep hole drilled by Humble Oil & Refining Co.

Pools Extended

6. Important extensions of production were made at East Hackberry, Manvel, Hankamer, Iowa, Thompson, as well as at Conroe and a number of fields, both old and new.

7. Salt was drilled into for the first time at three geophysical fields, namely Cameron Meadows, Cameron Parish, Louisiana; Darrow, Ascension Parish, Louisiana, and Esperson, Liberty County. Production already had been proved up on each of them.

8. Due largely to the Conroe Field, where an active development program resulted in the completion of a rapid succession of new wells, production on the coast was increased materially, being 5,349,193 bbls. greater than for the preceding six-month period, 9,642,343 bbls. more than for the first half of 1932, and lacking only 1,788,832 bbls. of equaling the peak for any half year, which was the last six months in 1930. Total output for the first half of this year was 34,193,647 bbls.

9. Also due mainly to Conroe, there was a very conspicuous increase in number of completions. Total completions for the first half of this year were 787, of which 574 were producers. For comparison there were 521 completions, 314 producers, the last six months of 1932, and 300 completions, 185 producers, the first half of that year. A curtailment of development put into effect at Conroe beginning in March, coupled with a temporary general slackening of drilling during April, May and early June, prevented a greater increase in completions.

Exploring New Areas

10. Actual drilling activity, except at Conroe, was confined chiefly to wildcat prospects and the more recently discovered fields. At Thompson, High Island, Iowa and Manvel consistent development was kept up. At Barbers Hill a half dozen or more rigs were constantly in operation and some good wells were completed but most of these were workovers or old wells being deepened and for the most part it can be said that work on the older domes, except occasional tests, was at a standstill.

Playing a Trend

Although there was hardly a part of the Gulf Coast which did not figure in some kind of a leasing, geophysical or wildcat drilling play, the most activity was that which centered around the Tomball-Huffsmith district in northern Harris County, and which spread along the "trend" through northern Harris and southern Montgomery Counties and into northern Waller County. This play, which was vindicated in May by the proving of production in the completion of Magnolia Petroleum Co. and Humble Oil & Refining Co.'s No. 1 Kobs, J. M. Hooper Survey, as an oil well in the Cockfield horizon, gave a new perspective into the importance of prospective coastal fields. Almost from the start this area was looked upon as proven territory, lease and royalty values climbed to proven acreage prices before a barrel of oil was found and even after a series of deep dry holes were drilled, which ordinarily might be looked upon as condemning the territory.

The incentive for the Tomball play was the encountering of sizable gas showing in a wildcat drilled by Indian Hill Oil Co. in October of 1932, located some 8 to 10 miles northeast of where the production has been opened. As the well was on the so-called "Conroe trend" and only about 20 miles to the southwest of Conroe, with the showings in the Cockfield horizon, in which are the producing sands of that field, and with everyone confidently expecting another Conroe, very

Gulf Coast

Daily Average and Monthly Production First Six Months of 1933

Texas

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
ALLEN:							
Daily average	11	10	10	10	1	11	
Month	347	286	316	305	32	333	1,619
ARIOLA:							
Daily average	65	68	65	74	201	91	
Month	2,010	1,902	2,010	2,210	6,237	2,727	17,096
BARBERS HILL:							
Daily average	20,969	23,050	22,573	21,844	21,760	21,978	
Month	650,933	645,408	699,767	655,321	674,562	659,344	3,984,435
BATSON:							
Daily average	758	652	672	716	683	792	
Month	23,492	18,252	20,830	21,484	21,171	23,760	128,989
BIG CREEK:							
Daily average	1,138	1,130	1,084	1,032	1,002	1,055	
Month	35,274	31,642	33,608	30,955	31,060	31,643	194,182
BLUE RIDGE:							
Daily average	981	717	741	693	658	730	
Month	30,419	20,073	22,979	20,787	20,392	21,889	136,539
BRENHAM:							
Daily average	57	41	34	30	34	38	
Month	1,763	1,144	1,056	910	1,050	1,148	7,071
BOLING:							
Daily average	387	374	387	372	349	385	
Month	11,991	10,478	11,991	11,162	10,813	11,553	67,978
BUCKEYE:							
Daily average	327	.....	1,265	.....	276	2,185	
Month	10,139	.....	39,213	.....	8,552	65,559	123,463
CEDAR BRAKE:							
Daily average	13	40	40	54	51	50	
Month	407	1,126	1,248	1,622	1,583	1,495	7,481
CLAY CREEK:							
Daily average	1,017	913	971	977	1,007	955	
Month	31,523	25,562	30,107	29,310	31,219	28,657	176,378
CONROE:							
Daily average	34,237	26,633	36,332	40,994	74,675	65,061	
Month	754,449	745,692	1,126,296	1,229,815	2,314,920	1,951,835	8,123,007
DAMON:							
Daily average	617	671	719	712	781	842	
Month	19,121	18,785	22,281	21,358	24,217	25,282	131,042
ESPERSON:							
Daily average	1,328	1,461	1,326	1,416	1,511	1,426	
Month	41,160	40,906	41,100	42,472	46,845	42,763	255,246
FANNETT:							
Daily average	304	257	324	330	326	314	
Month	9,425	8,999	10,040	9,905	10,102	9,406	58,380
GARWOOD:							
Daily average	.....	.....	.....	.....	.....	55	
Month	.....	.....	.....	.....	.....	1,639	1,639
GOOSE CREEK:							
Daily average	3,587	3,154	3,225	3,208	3,436	3,239	
Month	108,717	88,318	100,062	96,246	106,515	96,854	596,715
HANKAMER:							
Daily average	1,736	1,659	1,586	1,846	1,675	1,622	
Month	53,813	46,455	49,130	55,384	51,930	48,651	305,358
HIGH ISLAND:							
Daily average	5,582	5,131	6,655	7,134	7,149	7,968	
Month	173,046	143,664	206,307	214,013	221,613	239,039	1,197,687
HOCKLEY:							
Daily average	.....	54	135	62	48	34	
Month	.....	1,510	4,189	1,854	1,482	1,032	10,067
HULL:							
Daily average	5,054	4,956	4,776	4,778	5,074	4,707	
Month	156,792	138,762	148,052	143,336	157,298	141,232	885,462
GRETA:							
Daily average	.....	.....	.....	.....	52	615	
Month	.....	.....	.....	.....	1,608	18,451	20,059

(Continued on Next Page)

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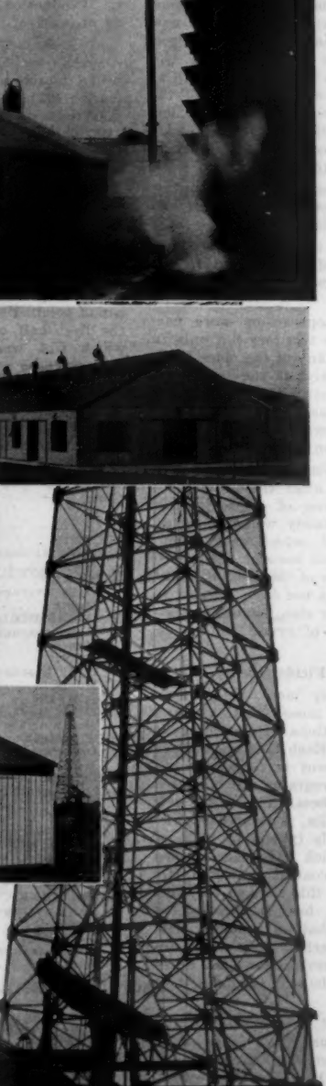

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Minneapolis, Minn.

little incentive was needed to set things going.

As early as 1928 geophysical work had been done in that area and the block on which the field has been opened has been under lease from then by the Vacuum Oil Co., and since the merger of that company with the Magnolia Petroleum Co., by the latter company. After the showings made in the Indian Hill test, Humble Oil & Refining Co. and others went into the district and did considerable additional geophysical work, which was followed by the immediate leasing by Humble of approximately 9,000 acres adjoining the Magnolia's 10,000-acre block. Since then the Texas Co., Shell Petroleum Corp., Stanolind Oil & Gas Co., Gulf Production Co. and many others have acquired considerable holdings.

GULF COAST

Texas

Summary of Field Operations

Field—	Comp.	Prod.	Abd.	Gas
Ariola	2	0	2	0
Barbers Hill	27	22,041	6	0
Batson	5	600	3	0
Big Creek	1	10	0	0
Blue Ridge	1	717	0	0
Buckeye	2	3,850	0	0
Clay Creek	5	50	4	0
Conroe	376	682,576	12	1
Damon Mound	10	467	2	0
Esperson	6	520	2	0
Fannett	2	0	2	0
Garwood	2	400	1	0
Goose Creek	1	100	0	0
Greta	2	550	1	0
Hankamer	1	185	0	0
High Island	8	5,340	1	0
Hockley	1	350	0	0
Hull	16	4,565	7	0
Humble	7	345	1	1
Keeran	2	530	0	0
Liberty	2	300	0	0
Livingston	7	1,790	5	0
Lost Lake	2	0	2	0
Manvel	6	3,405	2	0
Markham	2	730	0	0
McFaddin District	6	264	3	1
Moss Bluff	3	0	3	0
Mykawa	1	100	0	0
Nash	1	25	0	0
Orange	3	25	0	0
Orchard	1	0	1	0
Pierce Junction	11	4,285	2	0
Port Neches	2	30	1	0
Raccoon Bend	5	2,304	0	0
Refugio	2	220	0	0
Saratoga	7	245	0	0
Sour Lake	2	175	1	0
Spurger	5	0	4	1
Stratton Ridge	2	2,000	0	0
Sugarland	1	50	0	0
Thompson	57	62,689	4	0
Tomball	3	2,000	2	0
West Columbia	3	1,790	1	0
Miscellaneous	75	0	72	3
Total 1st. 6 mos. 1933.	635	805,663	147	7
Total 1st 6 mos. 1932.	269	83,014	131	7
Difference	416	722,649	16	0

Louisiana

Cameron Meadows	1	0	1	0
Choctaw	1	0	1	0
Darrow	1	40	0	0
Edgerly	4	135	2	0
Gueydan	2	311	1	0
Hackberry (East)	14	4,223	9	0
Hackberry (Old)	2	0	2	0
Iowa	5	2,670	0	1
Jennings	6	930	4	0
Lake Barre	6	5,435	1	0
Lake Pelto	1	0	1	0
Lake Washington	2	135	1	0
Leesville	3	3,328	1	0
Lockport	6	3,830	1	0
Port Barre	3	6,341	1	0
Sorrento	3	0	3	0
Starks	3	1,400	2	0
Sulphur	8	7,276	3	0
Vinton	4	31	2	0
White Castle	1	0	1	0
Miscellaneous	21	0	21	0
Total 1st 6 mos. 1933.	102	36,075	58	1
Total 1st 6 mos. 1932.	91	53,054	46	1
Difference	11	16,979	12	0
Total Gulf Coast 1933.	737	841,738	205	8
Total Gulf Coast 1932.	360	136,068	177	8
Diffeence	427	705,670	28	0

Completions by Months

Month—	Comp.	Prod.	Abd.	Gas
January	128	141,113	32	1
February	120	133,168	39	2
March	177	191,911	54	1
April	125	151,152	20	1
May	139	139,429	30	2
June	98	94,965	30	1
Total 1st 6 mos. 1933.	787	841,738	205	8

Tomball Discovery

The discovery well, Magnolia Petroleum Co.'s No. 1 Kobs, one of two tests started simultaneously by that company upon leases which were about to expire, came in May 19 estimated good for 2,000 bbls. daily from sand at 5,569 feet. The other well, No. 1 Martens, located approximately 3½ miles north, found salt water in the sand, was deepened to a total depth of 7,438 feet, where it later was abandoned, marking what is considered as the north limit. Before completion of the discovery well, an undivided half interest in Magnolia's block was acquired by Humble Oil & Refining Co. for $1,000,000. The latter company about the same time also purchased all the holdings of the Standard Oil Co. of Kansas, totaling approximately 1,100 acres, and since then has been consistently augmenting its holdings with additional purchases.

Pipe Line Outlets

Upon completion of the discovery well both Humble Pipe Line Co. and Magnolia Pipe Line Co. started construction of pipe line outlets, Humble laying a stub from the field to Satsuma on its trunk line, and Magnolia laying its line to Conroe, where it ties into that company's trunk system to Beaumont. Stanolind Pipe Line Co., whose trunk line to the coast runs almost through the field, will provide a third outlet. That company also has announced it will lay a new 10-inch line from the field, paralleling the old line to its present terminus at Sinco on the Houston Ship Channel, to Baytown, where that company's oil will be handled by Humble Oil & Refining Co.'s refinery pending completion of Pan American Refining Co.'s new plant at Texas City.

Magnolia and Humble have jointly launched a drilling development program on their Tomball holdings, which already has resulted in the addition of a second producer, an offset to the discovery well, and two gas wells. Additional operations have been started by Stanolind Oil & Gas Co. and Amerada Petroleum Corp., Continental Oil Co. and others, and it is anticipated as many as 60 rigs will be running there in the near future.

Early predictions estimated the size of Tomball would equal that of Conroe but later developments, including the drilling of a number of outlying dry holes, and information revealed by the completed wells, would indicate a field of somewhat lesser importance. However, there is no doubt that Tomball is the most important field which has been opened in the Cockfield sand play and in the Conroe trend since the discovery of Conroe itself.

Livingston Development

Development at Livingston, in southern Polk County, which was opened for production in the Cockfield late last year and which at first was played for a major area with acreage and royalty values being boosted almost on a par with those at Tomball so far has proved a little disappointing, according to opinion of some of the companies. At the opening of the year, the only well in the field was the discovery well, a wet gasser. Since then, two oil producers, offsets, located about three-quarters of a mile southeast of the discovery well, have been completed but these were not as large as expected, and with a dry hole to the north of the discovery well and a water well to the west it looks as though the producing area will be comparatively small and general interest in that district has subsided.

Along the trend westward from Conroe, the Garwood district in southern Colorado County, where last year Coyle-Concord Oil Co. brought in a large wet gasser indicating the existence of a sizable field, also has not developed into anything of particular importance as yet. A well drilled by Plymouth Oil & Gas Co. and located a mile southwest of the discovery gasser, was brought in last month as a 400 or 500-bbl. well in a sand at 6,203 feet but quickly went to water. Efforts to shut off the water and place the well back on production have met failure and the hole now is being deepened. Humble Oil & Refining Co., which purchased a half interest in 10,000 acres of the Coyle-Concord 20,000-acre block, drilled a deep dry hole a mile northwest of the gasser and now is drilling another test southwest of the gasser as a diagonal northwest offset to the Plymouth well.

Spurger, eastern Tyler County, another of the new fields opened along this trend last year, has had several additional tests

Texas (Continued)

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
HUMBLE:							
Daily average	5,792	5,269	5,213	5,236	5,163	5,162	
Month	179,550	147,537	161,753	157,082	160,059	154,856	960,837
KEERAN:							
Daily average	284	270	256	228	163	309	
Month	8,808	7,565	7,936	6,847	5,057	9,274	45,491
LIVINGSTON:							
Daily average	.....	.....	.....	.....	165	871	
Month	.....	.....	.....	.....	5,110	26,142	31,252
LOST LAKE:							
Daily average	301	281	284	278	249	239	
Month	9,334	7,863	8,804	8,344	7,713	7,167	49,225
MANVEL:							
Daily average	431	543	573	506	1,840	2,273	
Month	13,365	15,340	17,769	15,180	57,048	68,175	186,877
MARKHAM:							
Daily average	1,470	1,471	1,147	1,214	1,145	983	
Month	45,575	41,183	35,551	36,410	35,495	29,509	223,714
McFADDIN:							
Daily average	.....	.....	.....	61	87	52	
Month	.....	.....	.....	1,825	2,699	1,565	6,089
MOSS BLUFF:							
Daily average	73	58	40	19	.....	.....	
Month	2,261	1,626	1,245	563	.....	.....	5,695
MYKAWA:							
Daily average	367	228	370	423	532	216	
Month	11,373	6,380	11,478	12,686	16,496	6,489	64,902
NASH:							
Daily average	132	201	169	102	52	104	
Month	4,096	5,625	5,237	3,064	1,618	3,112	22,752
NORTH DAYTON:							
Daily average	147	114	129	180	130	138	
Month	4,553	3,198	3,993	5,405	4,035	4,139	25,323
ORANGE:							
Daily average	1,148	1,091	1,029	943	963	844	
Month	35,584	30,548	31,895	28,296	29,851	25,335	181,509
ORCHARD:							
Daily average	1,490	1,174	995	984	940	863	
Month	46,196	32,870	30,840	29,510	29,146	25,881	194,442
PIERCE JUNCTION:							
Daily average	5,862	5,345	5,393	4,690	3,777	4,324	
Month	181,728	149,669	167,332	140,708	117,089	129,705	886,231
PORT NECHES:							
Daily average	1,502	1,254	961	994	926	988	
Month	46,560	35,117	29,794	29,822	28,702	29,647	199,642
RACCOON BEND:							
Daily average	4,570	4,526	4,497	4,593	4,511	4,486	
Month	141,675	126,738	139,409	137,797	139,847	134,571	820,033
REFUGIO:							
Daily average	7,556	7,035	7,072	6,957	6,733	6,133	
Month	234,238	196,985	219,230	208,700	208,721	184,002	1,251,876
ROCKLAND:							
Daily average	15	12	12	10	10	12	
Month	460	339	372	304	320	357	2,152
SARATOGA:							
Daily average	810	841	749	880	898	865	
Month	25,115	23,549	23,211	26,408	27,834	25,940	152,057
SOUR LAKE:							
Daily average	1,224	1,221	1,221	1,161	1,359	1,373	
Month	37,940	34,186	37,857	35,433	42,127	41,182	228,725
SOUTH LIBERTY:							
Daily average	827	798	966	773	720	735	
Month	25,631	22,340	29,940	23,197	22,328	21,767	145,193
SPINDLETOP:							
Daily average	3,519	3,307	3,540	3,354	3,161	3,311	
Month	109,085	92,598	109,746	100,622	97,997	99,343	609,391
SUGARLAND:							
Daily average	7,792	7,515	7,542	7,524	7,527	7,482	
Month	241,550	210,410	233,808	225,716	233,332	224,495	1,369,312
STRATTON RIDGE:							
Daily average	.....	.....	.....	.....	224	108	
Month	.....	.....	.....	.....	6,940	3,249	10,189
THOMPSON (Rabbs Ridge)—							
Daily average	9,487	9,008	14,301	16,632	16,492	16,241	
Month	294,099	252,226	443,337	498,969	511,258	487,235	2,487,124
TOMBALL:							
Daily average	.....	.....	.....	.....	16	109	
Month	.....	.....	.....	.....	493	3,284	3,776
WEST COLUMBIA:							
Daily average	3,022	3,480	3,614	4,004	3,699	3,682	
Month	93,684	97,445	112,030	120,124	114,665	110,463	648,411
Daily average Texas Gulf Coast	126,913	126,117	143,005	148,048	152,221	176,038	150,510
Total Texas Gulf Coast	3,906,289	3,531,284	4,433,145	4,441,456	5,649,173	5,281,147	27,242,592

(Continued on Next Page)

drilled this year but all have been dry and to date the discovery wet gasser is the only producer and the area has been pretty well defined to the north, west and southwest.

Conroe Trend Not Consistent

The fact that the fields to date along the Conroe trend, with the exception of Conroe, have not materialized as had been expected has not lessened the interest in leasing along the trend. It is generally believed that additional fields will be opened along it and that the Cockfield horizon will prove out the Gulf Coast's most prolific producer.

The Greta Pool

What has the earmarks of being another important field was opened at Greta, Refugio County, in the lower Gulf Coast country. There, Greta Oil Corp.'s No. 1 O'Brien, E. H. Winfield Survey, came in the middle of May flowing an estimated 500 bbls. daily from sand at a total depth of 4,404 feet. The sand was identified as being in the lower Oligocene. The oil has a very desirable lub base and is comparable to that produced from the 3,700-foot horizon of the Refugio Field, although the sands are not the same. The discovery well has turned out an unusually consistent producer.

The prospective acreage was cut up into small tracts, many of them only 25 acres, and owned by numerous independent operators, and following completion of the discovery well there was started a rush to drill on these with location being made in the corners in such way as to compel an intense line fight drilling program. However, in the meantime the Railroad Commission has placed into effect regulations limiting the development to one well in 20 acres, resulting in drilling being placed on a more orderly basis. Two bad blowouts from a sand around 2,200 feet stressed the need of spacing restrictions.

Since the opening of the field, two additional good oil producers have been completed, one located 2,300 feet northwest of the first well, and the other 1,200 feet southwest. The depths of all are within a few feet of each other, and this fact, together with information obtained by correlation of a 2,200-foot sand encountered fairly uniformly in other tests, indicates a flat structural condition of large extent, possibly greater than the Refugio Field, located 9 miles southwest. As this is written, 15 rigs are operating in the area, including one a key test 2½ miles north of production and another at Vidauri, a mile and a half farther north.

Greta's Pipe Line Outlet

Although only independents were in the Greta play at first, Atlantic Oil Producing Co., Texas Co. and Continental Oil Co. since have acquired important holdings. Atlantic Pipe Line Co. now is extending its Refugio line to the new field to provide a pipe line outlet. Greta fits very nicely in Atlantic's picture. Due to the decline of production at Refugio to around 7,000 bbls. daily, that company's line from Refugio to tidewater at Harbor Island has much excess capacity. The line was built during the peak of Refugio's development and is capable of handling as much as 50,000 bbls. daily.

Greta is one of an almost straight line of fields which have been proved up along a trend extending from White Point through Saxet, Refugio, Fox (4 miles north of Refugio), Humble's O'Connor Pool, McFaddin and Keeran. Refugio so far has been the only one to become of major importance. O'Connor, McFaddin and Keeran, however, are made up of large ownerships and are in controlled hands with the result that development is being carried on slowly. A new addition to this line of fields was that opened during May by Stoneleigh Oil & Gas Co.'s No. 1 Terrell in the R. Manchola Survey, 4 miles southwest of Victoria in Victoria County. This wildcat, drilled on a block farmed out by Gulf Production Co., came in as a wet gasser from a sand at a total depth of 4,437 feet. It has been shut in and no additional drilling has been done.

In northern Refugio County, Gulf Production Co. has what looks like another one of this type of field but so far no commercial production has been developed. Its No. 2 O'Connor, C.E.P.&I.M. Survey No. 40, came in as a high pressure gas well in sand at 5,705-07 feet, but was shut in and when reopened made salt water and then was deepened and abandoned. No additional tests have been drilled.

Promise of Numerous Fields

Victoria and Refugio Counties give promise of numerous fields, each with many different sands and sand lenses, but in most cases production is extremely spotted, uncertain and hazardous.

The Conroe Field, Montgomery County, which has been the dominant field in Gulf Coast history, reached its peak of development during the first three months of this year. Since the middle of March there has been a steady decline in operations and now there are only approximately 45 rigs in active work. The decline was due to a voluntary curtailment of drilling by three of the larger companies in the field and also to the fact drilling programs on most of the smaller leases were being completed. A total of 376 wells was completed in the field during the first six months, making a grand total of approximately 500 producers on July 1. Under the program of development with most of the field being drilled one well to 20 acres it has been figured that when completely drilled there will be between 750 and 800 wells. As active drilling at Conroe did not begin until August of 1932, Conroe has gone on record as being one of the most rapidly drilled up fields in history.

Conroe's Production

Production from the Conroe Field totaled 8,123,007 bbls. for the six months as compared with the total of 2,449,645 bbls. for the entire year 1932. Up to July 1, the maximum daily allowable which the field has been permitted to run at any time was 65,000 bbls. Due to confusion which arose among operators along the eastern and southeastern margin of the field where two different horizons, the main Conroe sand and the Upper Cockfield sand, were found productive, a number of wells were permitted to produce unrestrained. The Upper Cockfield sand had been ruled as a separate field and as production of those wells known to be producing from that sand had not totaled 10,000 bbls., as specified by law, no production restrictions could be placed upon those wells. However, because of the uncertainty of determining which wells were in which sand, the two horizons being encountered at approximately the same depth in that area, offsets to Upper Cockfield wells and others in the vicinity also were permitted to flow unrestrained, this resulting in a material boost in the output for the field at that time. Since then the commission has ruled that, although the sands are separate horizons, there is intercommunication between them and that both are producing from a common reservoir, and in view of this all wells now have been placed on the same proration basis.

Laying of an 8-inch line by Tide Water Oil Co. from Conroe to Humble to connect with the Texas Pipe Line Co.'s Humble-Port Arthur system, and another by Channel Transport & Marketing Co. to Norsworthy on the Houston Ship Channel gave Conroe four pipe line outlets. Two other outlets are furnished by Humble Pipe Line Co. and the Texas Pipe Line Co., which laid lines out of the field in 1932.

Wharton County Prospects

At Louise, in Wharton County, Pure Oil Co. has what looks like another new coastal field. That company's No. 1 Stewart, Morris & Cummings' Survey No. 25, first test on the prospect, which was discovered in geophysical exploration in 1928, encountered a sand in the Frio at 5,963-71 feet, which on drill stem test recovered 17 fourbles of 38 gravity oil in 20 minutes. Although confident of being able to make a well, the hole was carried

(Continued on Page 125)

Louisiana

Daily Average and Monthly Production First Six Months of 1933

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
ANSE LA BUTTE:							
Daily average	55	55	49	47	47	31	
Month	1,700	1,545	1,511	1,415	1,459	942	8,572
BLACK BAYOU:							
Daily average	673	649	628	646	529	474	
Month	20,867	18,177	19,462	19,384	16,393	14,220	108,503
CAMERON MEADOWS:							
Daily average	159	45	50	48	50	51	
Month	4,923	1,267	1,557	1,436	1,555	1,523	12,261
CHOCTAW:							
Daily average	311	294	280	268	256	250	
Month	9,647	8,230	8,685	8,046	7,930	7,487	50,025
DARROW:							
Daily average	.....	.....	.....	.....	.....	35	
Month	.....	.....	.....	.....	.....	1,044	1,044
EDGERLY:							
Daily average	156	154	155	160	129	109	
Month	4,832	4,318	4,801	4,802	3,997	3,281	26,031
GUEYDAN:							
Daily average	592	490	431	412	443	408	
Month	18,358	13,726	13,366	12,350	13,739	12,238	83,777
HACKBERRY (Old):							
Daily average	914	974	717	626	668	548	
Month	28,338	27,274	22,223	18,775	20,702	16,441	133,753
HACKBERRY (East):							
Daily average	7,268	8,301	4,490	4,535	3,829	4,399	
Month	225,304	176,423	139,198	136,055	118,696	131,959	927,635
IOWA:							
Daily average	2,482	2,409	4,018	7,501	7,325	8,611	
Month	76,946	67,450	124,554	225,038	242,570	258,327	994,885
JENNINGS:							
Daily average	860	823	852	924	1,410	1,294	
Month	26,665	23,041	26,414	27,724	43,716	38,806	186,366
LAKE BARRE:							
Daily average	7,940	9,180	9,070	10,627	10,196	9,509	
Month	246,148	257,045	281,175	318,800	316,074	285,276	1,704,518
LAKE PELTO:							
Daily average	60	58	57	54	45	58	
Month	1,865	1,620	1,761	1,616	1,395	1,755	10,912
LAKE WASHINGTON:							
Daily average	284	370	268	167	159	374	
Month	8,808	10,350	8,306	5,002	4,923	11,227	48,617
LEESVILLE:							
Daily average	648	469	245	1,514	1,693	1,021	
Month	20,982	13,132	7,598	45,424	52,489	30,617	169,342
LOCKPORT:							
Daily average	3,199	2,812	3,520	3,065	2,314	2,369	
Month	99,161	78,730	109,120	91,945	71,738	68,050	518,774
PORT BARRE:							
Daily average	2,609	2,189	3,363	3,829	4,067	3,503	
Month	80,877	61,296	104,250	114,877	126,071	105,076	592,447
SORRENTO:							
Daily average	45	51	49	41	28	44	
Month	1,390	1,423	1,513	1,227	864	1,316	7,733
STARKS:							
Daily average	1,427	987	848	772	1,041	1,123	
Month	44,239	27,631	26,284	23,152	32,277	33,689	187,272
SULPHUR:							
Daily average	842	927	1,481	1,913	2,467	3,298	
Month	26,106	25,953	45,914	57,386	76,473	98,949	330,781
SWEET LAKE:							
Daily average	590	568	548	545	511	508	
Month	18,296	15,628	16,982	16,345	15,849	15,240	98,340
VINTON:							
Daily average	3,882	3,587	3,485	3,540	3,277	3,254	
Month	120,340	100,430	108,037	106,201	101,581	97,616	634,205
WELSH:							
Daily average	51	50	50	50	50	49	
Month	1,581	1,404	1,552	1,505	1,555	1,469	9,057
WHITE CASTLE:							
Daily average	507	495	491	486	480	466	
Month	15,711	13,850	15,220	14,570	14,876	13,992	88,219
Daily average Louisiana Gulf Coast	35,554	33,927	35,145	41,779	41,514	41,685	38,299
Total Louisiana Gulf Coast	1,102,194	949,943	1,089,483	1,253,076	1,286,922	1,250,561	6,932,169
Daily average total Gulf Coast	161,567	160,944	178,150	189,818	223,745	221,750	188,810
Total first six months 1933	5,008,573	4,481,227	5,522,626	5,694,532	6,936,095	6,531,707	34,174,761
Total first six months 1932	4,178,761	3,722,638	3,988,104	4,002,141	4,415,809	4,244,365	24,551,304
Total first six months 1931	5,593,347	4,836,692	5,081,816	5,354,911	5,499,710	4,881,372	31,422,135
Total first six months 1930	5,881,489	5,619,270	6,105,265	5,980,087	6,131,740	6,214,648	35,982,479
Total first six months 1929	4,344,333	3,959,613	4,586,507	4,705,904	4,873,923	4,484,434	26,754,614
Total first six months 1928	3,796,856	3,852,390	3,796,816	3,760,253	4,155,544	4,114,798	23,276,496
Total first six months 1927	5,232,366	4,409,580	4,837,581	4,420,560	4,762,137	4,612,620	28,274,854
Total first six months 1926	3,023,377	2,820,508	3,034,633	2,842,050	3,208,731	2,849,970	17,779,469

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WICHITA, KANSAS, U. S. A.

World's Largest Oil Field Suffered Six Months of Overproduction and Low Crude Prices

By L. E. BREDBERG
Fort Worth Bureau, The Oil and Gas Journal

The accompanying report on operations for the first six months of 1933 will show a decided change in activities under the previous six months' or year's activities. There were only 913 wells completed in the entire district, including the East Texas Field, a great decrease from the first and last six months in 1932. Eighty-three tests were abandoned as dry holes, 46 of which were wildcats.

Hopkins, Henderson, Cherokee, Upshur and Rusk Counties showed the largest number of wildcat tests put down. There were 6 dry holes abandoned in each of the first three counties named, 8 in Upshur and 13 in Rusk. Several of those abandoned in Rusk were on the edge of the East Texas Field, while a couple of those abandoned in Cherokee were also drilled for production on the edge, but failed. Seven tests were abandoned in Van Zandt County, the majority of which were in the shallow Nacatosh sand area north of the Van Field, and on the edge of that field.

Wildcatting slowed up during May and June in the district with no signs of it being revived to any great extent during the coming three or six months unless crude prices are increased, which will have an incentive to expand exploration work for other Woodbine sand fields in the many counties located on the east side of the State.

Slowing Up in East Texas

There are only about 20 wells being completed in the East Texas Field every week, with new locations being held down. With over 10,300 wells in the field, drilling activities from now on will advance but slowly. A former rapid drilling campaign, coupled with low prices during the six months, resulted in a low rate of field drilling during the fore part of 1933. While drilling slowed up, companies and operators turned their attention to equipping their wells for pumping, this activity being brought on by the showing up of more salt water on the west side of the field, and also because of an overdecline of bottom hole pressures caused by high withdrawals during four of the six months.

Companies and operators will continue to install pumping equipment during the next six months and year as pressures continue to decline and more wells refuse to respond when "kicked off" each day to make their daily quota of production under the daily allowables set by the commission. There are now over 600 pumping and salt water wells in the East Texas Field, and during the end of the next six months this number is expected to be at least doubled, especially if production is not held to the present allowlowable of 548,000 bbls. or under. If the Federal Government takes a hand in production and oil transportation, as now appears certain, the rapid decline in pressures may be checked because of holding production to around market demand.

Prices for crude oil fell to as low as 10 cents per barrel in East Texas during the past six months, raising back to 25 cents, then to 50 cents, the prevailing posted price on June 30. With the field producing over a million barrels per day at a time when consumption was low, prices went sliding to the 10-cent bottom. However, they were not long held at that price, gradually working back up as demand seemed to warrant the taking of more oil from the field, storage being filled in the field, on the Gulf Coast and Atlantic Seaboard with the cheap commodity.

On January 1 a new proration order went into effect in the field, giving wells a basic allowable of 26 bbls. per day, with 40,000 more barrels per day to be distributed among the wells on bottom hole pressure plans, making a top allowable of 290,000 bbls. per day.

On March 21 the Railroad Commission raised the allowable from 290,000 bbls. to 400,000 bbls. Operators had been producing around 150,000 bbls. per day more than the allowable. The new order regulated well production on a per well basis, sand thickness and bottom hole pressure, combining permeability, porosity and saturation. This new order was soon attacked and a Federal court injunction obtained against it.

On April 3 another hearing on East Texas was held at Austin. The commission considered opening all wells in the field to make potential tests, but Capt. J. F. Lucey of the Lucey Petroleum Corp. and others asked for a Federal injunction to prevent such action, which was granted the complainants.

Conditions in the field continued to grow worse until April 6 when the entire field was shut down for two weeks to allow the taking of potential tests on some 300 key wells. Two-hour tests were made on these wells, the Federal court granting the commission permission to make such a test. This was the second time the field was shut down in three and one-half months, it having previously been shut in during the latter part of December, 1932, for two weeks.

The average well in the field was considered as having a potential of 12,360 bbls. per day, as a result of the potential tests taken. A later test taken the following month showed a decline in potentials of around 11 per cent, while the bottom hole pressures fell nearly 4 per cent in that time, and during the large producing period, when around 1,000,000 bbls. per day was coming out of the field.

Oil at a Dime per Barrel

During this period of high production some 3,000,000 bbls. of steel storage was erected or planned for construction in the field, some of the operators and royalty owners running their production to storage instead of selling it at 10 cents per barrel as posted by the Texas Co. on April 24, which followed the new 750,000-bbls. daily allowable granted the field a few days before the price slash. The Magnolia Petroleum Co., alone, retained a 25-cent price when all others cut to 10 cents. The other purchasers later came up to 25 cents, where it was "pegged" until June 14, when it was raised to 50 cents per barrel.

Overproduction during the two months, coupled with the 10-cent price, caused many of the operators to shut in their wells, electing to allow offsets to produce and drain their properties rather than sell the high gravity crude at such a low price. Hundreds of tank car loads of oil were shipped out of the field, some of them having no market destination and piling up at Gulf Coast and other points where demurrage caused a loss in profits on most of such transported cheap oil.

On May 8 a Federal court hearing on the 750,000-bbl. order, and an attack by Rowan & Nichols, Hunt Production Co. and others ended in a decision for the Railroad Commission, the first decision granted that body by the Federal court in regard to proration order attacks. The decision still stands although the daily allowable was cut back to 10 per cent of the wells' potentials on June 14, making a daily allowable of around 548,000 bbls. at the present time.

This new allowable came after the June 12 hearing at Austin by the commission. New potential tests were taken the fore part of June in order to secure more data for the June 12 hearing. Results of these tests were mentioned above.

Crude Demand Increased

Purchasing companies continue to solicit more connections in the field and the crude oil market has been increasing in strength during the past two months in the field. The gasoline market, however, is now weakening, due to the fact that many of the 49 refineries in the field have considerable stocks of gasoline in storage at their plants, stocks which they have threatened to dump on the market if they cannot find an outlet for it at the present higher prices. If such a move was made it would probably disrupt the present market and hurt conditions materially.

During the fore part of the year many

East Texas

Daily Average and Monthly Production First Six Months of 1933

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
JOINER:							
Daily average	97,761	112,297	162,976	111,095	288,778	234,851	
Month	3,030,591	3,144,311	5,052,256	3,332,847	8,952,115	7,045,400	30,557,660
KILGORE:							
Daily average	109,039	122,330	176,086	104,317	303,641	275,477	
Month	3,380,209	3,453,244	5,458,659	3,129,510	9,412,875	8,264,315	33,098,812
LONGVIEW:							
Daily average	136,605	144,429	220,805	148,463	417,986	253,293	
Month	4,046,755	4,044,019	6,844,957	4,453,890	12,957,565	7,598,785	39,947,964
Daily average	237,405	280,056	559,867	263,875	1,010,405	763,210	572,400
Total first six months 1933	10,459,555	10,641,574	17,355,872	10,916,250	31,322,545	22,908,640	103,604,436
Total first six months 1932	10,257,192	8,988,703	10,141,772	10,659,501	10,707,333	9,997,238	60,752,039
Total first six months 1931	110,515	701,739	2,900,925	7,479,756	9,658,710	10,630,539	31,532,184

East Central Texas

Daily Average and Monthly Production First Six Months of 1933

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
BOGGY CREEK:							
Daily average	1,050	965	934	913	850	880	
Month	32,555	27,025	28,958	27,395	26,355	26,411	168,699
CURRIE:							
Daily average	769	163	164	153	151	157	
Month	5,233	4,568	5,080	4,598	4,997	4,707	29,183
MEXIA:							
Daily average	2,550	2,501	2,495	2,471	2,448	2,419	
Month	79,057	70,022	77,340	74,120	75,820	72,566	448,925
POWELL:							
Daily average	2,727	2,765	2,759	2,778	2,749	2,321	
Month	84,539	77,425	85,523	83,342	85,215	69,930	485,974
RICHLAND:							
Daily average	32	32	32	31	32	30	
Month	990	890	1,027	937	998	913	5,755
SATIN:							
Daily average	30	23	20	19	10	11	
Month	935	640	628	565	315	324	3,407
VAN:							
Daily average	42,018	52,417	52,614	52,442	52,499	52,356	
Month	1,302,554	1,467,672	1,631,038	1,573,266	1,627,461	1,570,669	9,172,660
WORTHAM:							
Daily average	136	133	125	157	118	119	
Month	4,219	3,720	3,879	4,708	3,668	3,566	23,760
Daily average	48,712	58,999	59,144	58,964	58,865	58,203	57,115
Total first six months 1933	1,510,082	1,651,963	1,833,473	1,768,921	1,824,329	1,749,036	10,338,263
Total first six months 1932	1,495,327	1,536,106	1,704,902	1,663,745	1,765,831	1,817,113	9,982,024
Total first six months 1931	1,249,782	1,185,856	1,455,154	1,609,950	1,689,453	1,787,686	8,977,881
TOTAL EAST TEXAS AND EAST CENTRAL TEXAS:							
Total first six months 1933	11,969,637	12,293,537	19,189,345	12,685,181	33,147,374	24,657,726	113,942,799
Total first six months 1932	11,752,519	10,523,809	11,846,674	12,323,246	12,473,164	11,814,351	70,734,063
Total first six months 1931	1,360,297	1,887,595	4,356,079	8,989,706	11,348,163	12,468,225	40,410,065
Total first six months 1930	669,523	678,455	813,799	1,030,567	1,194,501	1,229,886	5,616,731
Total first six months 1929	675,021	579,471	646,569	605,389	668,595	577,820	3,712,775
Total first six months 1928	797,384	727,284	780,967	727,465	736,122	706,269	4,475,481
Total first six months 1927	1,479,568	895,208	1,442,554	1,264,690	1,066,028	1,032,720	7,673,768
Total first six months 1926	1,928,851	759,548	1,833,614	1,763,970	1,703,852	1,557,780	10,536,616
Total first six months 1925	6,376,338	518,416	4,888,917	4,111,490	3,863,275	3,379,740	27,138,834

injunctions were obtained by and against the commission, the latter by refiners and operators who desired to produce their wells and operate their pipe lines and refineries without interference. Such injunctions were granted until the Federal court's decision at Fort Worth, as mentioned above. This forbade operators from producing in defiance of the commission's orders. One pipe line company had formerly obtained an injunction to prevent the state authorities from going onto its property and checking storage tanks, records and pipe line runs, but this was rescinded later.

The commission tried to prevent the railroads from transporting any oil not accompanied by a tender approved by the commission. It also tried to prohibit the spotting of tank cars at loading racks, sidings or other points where oil was being loaded unless a tender had been approved by the commission showing the source of the oil. The railroads immediately obtained a Federal court injunction to prevent such interference by the commission, saying that such a move would interfere with interstate shipments and was unconstitutional.

Conditions grew worse and worse during the first four months of the year; more by-passes were uncovered, all kinds of schemes were devised and used to overproduce and transport such oil, and the commission was powerless to cope with the situation, having no penalties to assess a producer or transporter when found violating its orders.

Landowners, operators and royalty owners in the district met many times at various places to discuss the chaotic situation confronting them, and appealed to state officials and even to President Roosevelt to do something to prevent overproduction as then raging. The legislature and senate were petitioned to set up a new conservation body, an appointive board, but the bill failed and the present three members of the Railroad Commission continue to legislate on oil and gas matters.

The senate and house of representatives of Texas passed a bill making it a felony to produce oil in excess of the commission's orders, but the governor vetoed the bill. It will, however, go into effect September 1, after the 90-day delay accorded such legislation. This should have a good effect on production, the commission then having plenty of power and a penalty to assess violators of its orders.

Officials and representatives of all major producing and transporting companies met in Fort Worth for a two-day session, March 13 and 14, going on to Austin to meet with the legislative members of the State. However, the trip proved of no avail, conditions continuing as before, if not worse.

Checking Up on Bad Gasoline

The attorney general's department sent a couple of assistants to Longview early in the year in an effort to quell some of the overproduction by bringing charges and receiverships against violators, and the comptroller's department sent several men to check tax evasions. The latter checked refineries, gasoline trucks and other sources of evasion, and as a result the State is now receiving several times the amount of taxes on gasoline sales that it was getting before this move was made.

A chemist was also sent to the field to run tests on gasoline at the refineries, in trucks and in service stations, and much inferior motor fuel was discovered going out of the district. Suits were instigated in regard to tax evasion and inferior motor fuel, a move which has eliminated a part if not all of this trouble to the industry.

The attorney general's department instituted many receivership actions, but the Sixth Court of Civil Appeals at Texarkana ruled against such actions, taking away one of the Stat's methods of penalizing violators.

The Railroad Commission held a farcical two week's hearing the fore part of the year regarding overproduction and transporting of excess oil, but nothing came of the hearing, which was adjourned January 21. A later hearing was held by a legislative committee chosen to investigate the work of the Railroad Commission in East Texas. This hearing also apparently had no effect on conditions or on the commission.

On January 31 a new order went into effect in regard to well spacing in the East Texas Field. This order allowed drilling of wells 660 feet apart or stipulated that they should be at least 330 feet from property lines. Such a ruling would place one well to each 10 acres instead of one to each 20 acres as before. However, such regulations were given little attention and many wells have been drilled on much less acreage, the commission having been accused, time and again, for granting too many permits for drilling.

Dynamiting of tanks, pipe lines and wells were reported frequently, these assaults having been made to discourage violators from carrying on their clandestine operations in the field. It seemed to have little effect.

A vigilante association was organized during the middle of May to help investigate violations and report them to the commission, the majority of this band being landowners and operators in the field who were in position to ascertain violations and to know the violators. This association has an office in Longview and has been active during the past three months on this work, co-operating with the commission.

During the middle of February the Sinclair Prairie Oil Co. announced that it would pay current posted price for all "back allowable" oil. The operators had to prove that such oil was produced in compliance with the commission's orders before the company would take it.

Bates & Underwood were given Federal court permisaion to produce back allowable oil. This permission eventually caused considerable trouble in the field, many operators seeking permission from the commission to produce what they termed back allowable oil. Independent operators and companies alike sought many such permits until the amount reached such proportions that it was causing much excess oil to be thrown on the market. Operators would obtain such permits and then take advantage of them by running more oil than the permits granted. The commission then rescinded the back allowable order for one month, beginning July 1, which should be of great assistance in helping to curb overproduction, the field men having much better chance of tracking down violations when the production of back allowable oil was removed from the daily amounts granted under the regular proration order.

Another factor in the overproduction game in the field is the producing of several shallow wells, drilled between 700 and 800 feet, in the Ferguson Survey in western Gregg County. One small company obtained an injunction to prevent the commission from interfering with producing its two shallow wells as it desired, and to obtain equity another small company with offset wells had to make the same move. There are six such wells producing in this area. The oil is said to be coming from the Woodbine sand up through a faulty casing in a nearby well and seeping into the Carrizo water sand to which the shallow wells are drilled. The wells are producing several thousand barrels per month, with large amount of fresh water. The companies have a market for the oil at below the posted price. The commission ordered the faulty casing remedied, but so far it apparently has not been done.

Van Pool, Van Zandt County

More wells were put on the pump in the Van Field in Van Zandt County during the past six months, and several dry holes have been drilled within the pool on the edges. However, efficient operation of the pool will make it produce the maximum. The field is now producing around 47,000 bbls. per day, the allowable being 42,500 bbls., granted by the Railroad Commission after the Pure Oil Co., the major producer and operator of the pool, obtained a Federal injunction against the commission because the company wanted 10,000 more barrels per day from the field in January and the commission would not grant the increase. The commission maintained that the company should help out the situation in East Texas and take more oil from that area instead of from the Van Pool.

There has been considerable activity just to the north of the Van Pool during the past three months. Several tests have been put down to test the Nacatoch sand horizon. There are three small wells producing from this sand, but the majority of the tests proved dry, some of them going on to the Woodbine and proving dry in that horizon.

Gardner Brothers of Dallas drilled a Trinity sand test to the northwest of the Van Pool, but that test also proved dry, ruining chances for production from that horizon in the Van area.

The first well drilled to the Nacatoch sand was Peden & Olson's on the Brannon farm in the J. Goodman Survey. It was located 4,000 feet north and a little west of the nearest Woodbine sand producer of the Van Pool. The Nacatoch sand was logged from 1,241-50 feet. The well made around 25 bbls. per day. The other two producers in the area are also small producers.

Several more tests are slated to be drilled in this shallow sand area within the next two or three months. However, little can be expected from this sand in the area.

EAST CENTRAL AND EAST TEXAS
Summary of Wells Completed in First Six Months of 1933
Completions by County

County—	Comp.	Prod.	Abd.	Gas
Anderson	2	0	2	0
Angelina	2	0	2	0
Bowie	2	0	2	0
Cherokee	6	0	6	0
Ellis	2	0	2	0
Franklin	3	0	3	0
Freestone	1	0	1	0
Gregg	390	26,542	4	0
Henderson	6	0	6	0
Hill	3	0	3	0
Hopkins	6	0	6	0
Hunt	1	0	1	0
Lamar	1	0	1	0
Leon	3	0	3	0
Morris	1	0	1	0
Rusk	365	21,464	13	1
Smith	29	1,410	5	0
Titus	2	0	2	0
Upshur	63	3,053	8	0
Van Zandt	30	1,540	7	0
Wood	5	0	5	0
Total	913	53,999	88	1

Completions by Months

Month—	Comp.	Prod.	Abd.	Gas
January	270	14,650	17	0
February	171	9,509	10	1
March	137	8,125	9	0
April	104	7,217	9	0
May	125	7,891	22	0
June	106	6,607	16	0
Total 1st 6 mos. 1933.	913	53,999	83	1
Total 1st 6 mos. 1932.	2,823	211,937	101	5
Difference	1,910	157,938	18	4

Note—The initial production figures given in the above table represent only the total quantity of oil produced mostly on short time gauges when the wells came in. The East Texas Field being under proration throughout the period, the wells were not permitted to flow a full 24 hours' production when such production would exceed the allowable of the well. The gauges ran all the way from a few minutes up to 24 hours.

Wildcatting in East Texas

The Jamestown area of Upshur County was one of the most interesting wildcat areas of the district during the past six months, especially after Wadley, Lyons, Taubel and others, operators in this area, drilled in their No. 1 Shettlesworth in the James Dunn Survey. It topped the sand at 3,722 feet, deeper than the Woodbine is found in the main field 4 miles to the south, consequently the area was "dubbed" a separate and distinct field. The well made around 75 bbls. per day; however, it later showed up a vast amount of salt water. Six other tests in the area proved dry, condemning the area as far as major importance is concerned.

The Buffalo structure and block near Centerville, in Leon County, was one of the most closely watched areas during the fore part of the year when the Shell Petroleum Corp., operating and testing the block for the associated companies and operators, drilled a test which had two exceptionally good saturated streaks of sand, neither of which produced any oil, calling for the final abandonment of the test. It was cored to a total depth of 6,305 feet, then plugged back to the upper saturated streaks, the best of which was found at 6,054-58 feet. Several tests of the streaks failed to bring a producer for the area. The associated companies are now drilling a second test on this block, 2 miles to the west.

Bateman and others are also drilling an interesting test in this county, south and west of Buffalo and the above mentioned tests. It is now getting down to an interesting depth and will be closely watched for showings found in the Shell test to the northeast.

Meyers' No. 1 Olson in the Gibson Survey, Henderson County, created much excitement during the fore part of the year, when it was reported to have cored saturated sand, but this was later considered as erroneous information for the test never revealed any oil and was finally abandoned at 4,321 feet. Another test was drilled nearby, but it also proved a "duster." Total depth was 4,105 feet.

One of the deepest tests drilled in the district was put down by the Loring Oil Co. on the Swearingen farm in the Oliver Lund Survey, Cherokee County. This test went to 5,400 feet before it was plugged.

Kentucky Almost at a Standstill in First Half of Year, But Revival Is Promised

Field work in Kentucky took a heavy drop during the first half of 1933, compared with 1932, there being a decline of 140 completions, 3,815 bbls. in initial production, 24 less dry holes and 32 less gas wells. Daviess County led in completions for the first half of 1933 with 33,626 bbls. production and 19 dry holes, while Ohio County accounted for 20 completions, 1,114 bbls. production, 10 dry holes and 2 gas wells.

Indications are that the last half of 1933 will show an increase in completed wells, as work is increasing in the State. Much interest is being manifested in Western Kentucky by operators who have never "played" that country, as well as by the experienced Kentucky oil men. It is attractive to wildcatters with small capital, and if conditions in the oil business improve and prices are made more attractive the territory will receive consideration in the next few months.

KENTUCKY FIELDS
Summary of Wells Completed for First Half of 1933

Month—	Comp.	Prod.	Dry	Gas
January	19	249	7	2
February	9	724	6	0
March	9	942	4	1
April	4	155	2	0
May	18	280	9	0
June	18	327	10	0
First half 1933	77	2,677	38	3
First half 1932	217	6,513	62	35
Difference	140	3,816	24	32

Summary by Counties

County—	Comp.	Prod.	Dry	Gas
Ohio	20	1,114	10	2
Daviess	33	626	19	0
McLean	8	60	3	0
Barren	1	20	0	0
Hancock	4	35	1	0
Henderson	2	60	0	0
Muhlenberg	30	10	1	0
Knox	1	700	0	0
Hart	1	0	0	1
Allen	4	3	3	0
Warren	1	0	1	0
First half 1933	77	2,677	38	3

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Several New Pools Opened in Oklahoma in First Half of Year, One a Major Development

By W. A. SPINNEY
Staff Correspondent, Oklahoma Fields

During the first half of 1933, the Oklahoma legislature passed a new proration law, that has enough teeth in it to make violators subject to heavy fines and imprisonment. It was necessary to enact such a law because of the almost continuous court procedures during the last four years attacking the old proration law and the method of administering it.

A number of new pools were found in the State during the half year. Pools were opened in Pontotoc, Seminole and Creek Counties.

During the first half of 1933 a new proration law was passed by the state legislature. The enforcement of the law was placed in the hands of the Oklahoma Corporation Commission. They appointed a state umpire and an assistant and five deputy umpires. These newly appointed proration officials took office on April 17.

The bill became a law when Governor Murray signed it on April 10. It provided for heavy fines and imprisonment for violators. It defines waste, both economic and underground, equitable taking of oil from pools as well as leases in the State. The Corporation Commission has the authority of making all the orders, rules and regulations, and all petitions must be given 10 days' publication before hearing. Salaries of all proration officers was provided in the act. The expense of administering the proration law will be paid by Oklahoma producers who are subject to a tax of one-eighth of 1 cent per barrel of oil produced, the proceeds of which will be paid into the proration fund provided by the new proration law.

Producers in the Oklahoma City Field had the usual hectic time during the first half of the year. The field was shut in by executive order on March 4 for a period of 10 days. It was shut in on account of the fact that some companies were alleged to have been overproducing. The Wilcox sand wells in the field were again shut in on April 1 until April 17. New potentials taken on all the wells showed a 50 per cent decline from the previous potential taken in November, 1931.

New Production Peak

A new peak in production for the Oklahoma City Field was reached on March 4 when it was estimated the field made 354,554 bbls. of oil in 24 hours, from 273 of the nearly 1,000 wells then in the field. The previous highest daily gauge was 353,403 bbls. on July 7, 1931.

Development work in the Oklahoma City Pool was slowed down during the first part of the year. There are 1,024 oil wells in that area, and it is believed to be about all drilled up.

The Wentz Pool, in Noble County, was the only important field that was brought onto production during the first half of the year. This field was discovered in September, 1932, but the second well was not completed in that area until January, 1933, giving added interest in the area. In May a gusher well was completed on the west side of the field. The discovery well in the area was drilled on a unitized block of 2,160 acres. Companies joining the unit operation included Shell Petroleum Corp., Gypsy Oil Co., Carter Oil Co., Sinclair Prairie Oil Co., L. H. Wentz, Twin State Oil Co., Empire Oil & Refining Co. and Phillips Petroleum Co. These companies form what is known as the Lucien Consolidated Community.

The second well to produce from the Wilcox sand was the Lucien Consolidated Community's No. 1 Jerome, C SW SW, Section 8-20-2w. It flowed 1,115 bbls. of oil in 24 hours from the Wilcox sand at 5,184-5,306 feet.

The third well in the area was 2½ miles southeast of the discovery well. It was the Stanolind Oil & Gas Co. and Amerada Petroleum Corp.'s No. 1 Kolb, C NE NW, Section 33-20-2w. The well made 640 bbls. of oil in 24 hours from the Wilcox sand at 5,075-5,107 feet.

The completion of these wells in the Wentz Pool resulted in additional locations and the Sinclair Prairie Oil Co.'s No. 1 Jerome, SW cor., Section 15-20-2w, about 1½ miles east of the discovery well, was the first dry hole to be completed in the area. It found water in the Wilcox sand at 5,152-56 feet.

During the first six months of this year on account of short term leases, nine wells were started in the Wentz Pool area, and five wells were completed. The five oil wells including the discovery well, had a potential production of 19,000 bbls. a day on June 30. All of these wells were shut in awaiting a pipe line outlet which is being constructed into the area. This pool is expected to be granted an increased allowable, as the purchasing companies have nominated 12,000 bbls. a day from this field.

The finding of a large well on the west side of the pool, in May, 1933, removed the Wentz Pool from the secondary group of areas in the State to a major producing field. At the close of the first six months the Wentz Pool is the only future reserve area in Oklahoma. The gusher well was completed after three relatively small wells had been completed in the field. It also extended the producing area a location to the west and many believed it assures the spread of the producing area across Noble County west to the Garfield County line. The well was in the Lucien Consolidated Community's No. 1 Whitten, C SE SE Section 7-20-2w, which is estimated at 10,000 bbls. of oil and 10,000,000 feet of gas per day from the Wilcox sand at 5,168-5,211 feet. The well flowed 498 bbls. of oil the first hour.

Another well that extended production 1½ miles southwest was the Lucien Consolidated Community's No. 1 E. Farr, C NE NE Section 19-20-2w, which flowed 360 bbls. of oil in an hour and a half. This well was given an estimated potential of 6,000 bbls. a day. The best gauge of this well was 1,125 bbls. of oil in four hours. The gas was estimated at 20,000,-

Oklahoma

Daily Average and Monthly Production First Six Months of 1933

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
ADA-ALLEN DISTRICT:							
Daily average	11,976	12,625	12,156	11,915	11,427	11,388	
Month	371,256	336,700	376,836	357,450	354,237	341,640	2,138,119
BRAMAN DISTRICT:							
Daily average	1,690	1,785	1,855	1,512	1,640	1,564	
Month	52,390	49,980	57,505	45,360	50,840	46,920	303,995
BRISTOW-DEPEW DISTRICT:							
Daily average	9,475	8,409	8,437	8,405	8,215	8,174	
Month	293,725	235,452	261,547	252,150	254,665	245,220	1,542,759
SLICK:							
Daily average	2,754	2,812	2,437	2,448	2,156	2,163	
Month	85,374	78,736	75,547	73,440	66,836	64,890	444,823
BURBANK:							
Daily average	10,016	9,185	9,510	9,917	9,911	9,904	
Month	310,496	257,180	294,810	297,510	307,241	297,120	1,764,357
CARTER-KNOX:							
Daily average	1,736	1,716	1,330	1,778	1,670	1,676	
Month	53,816	48,048	50,530	53,340	51,770	50,280	307,784
CEMENT:							
Daily average	2,268	2,192	2,238	2,146	2,068	2,047	
Month	70,308	61,376	69,378	64,380	64,139	61,410	390,991
CHANDLER:							
Daily average	3,147	3,221	2,889	2,831	2,478	2,463	
Month	97,557	90,188	89,559	84,930	76,818	73,890	512,943
CLEVELAND-KEYSTONE:							
Daily average	2,428	2,530	2,374	2,408	2,360	2,344	
Month	75,268	70,840	73,594	72,240	73,160	70,320	435,422
CROMWELL:							
Daily average	5,018	5,049	5,127	5,029	4,918	4,903	
Month	155,558	141,372	158,937	150,870	152,458	147,090	906,285
DEER CREEK:							
Daily average	447	418	449	388	401	389	
Month	13,857	11,704	13,919	11,640	12,431	11,670	75,221
DAVENPORT-KENDRICK-STROUD:							
Daily average	1,632	1,345	1,206	1,383	1,234	1,212	
Month	50,592	37,660	37,386	41,490	38,254	36,360	241,742
DUNCAN DISTRICT:							
Daily average	5,920	5,885	5,604	4,878	5,050	4,987	
Month	183,520	164,780	173,724	146,340	156,550	149,610	974,524
FOX-GRAHAM DISTRICT:							
Daily average	4,378	5,011	4,294	4,205	4,343	4,260	
Month	135,718	140,308	133,111	126,150	134,633	127,800	797,723
GARBER-BILLINGS DISTRICT:							
Daily average	3,743	4,001	3,894	3,824	3,766	3,642	
Month	116,033	112,028	120,714	114,720	116,746	109,260	689,501
HENRYETTA DISTRICT:							
Daily average	2,901	1,943	1,816	1,991	1,904	1,910	
Month	62,031	54,404	56,296	59,730	59,024	57,300	348,785
HEALDTON:							
Daily average	10,416	10,211	10,174	10,017	9,901	9,878	
Month	322,896	285,908	315,394	300,510	306,931	296,340	1,827,979
HUBBARD:							
Daily average	1,838	1,744	1,468	1,466	1,048	982	
Month	56,978	48,832	45,508	43,980	32,488	29,460	257,246
JEFFERSON COUNTY:							
Daily average	1,748	1,833	2,004	2,145	1,962	1,945	
Month	54,188	51,324	62,124	64,350	60,822	58,350	351,158
KEYSTONE:							
Daily average	267	270	248	262	249	251	
Month	8,277	7,560	7,688	7,860	7,719	7,530	46,634
KONAWA:							
Daily average	3,474	3,427	3,222	2,916	2,886	3,140	
Month	107,694	95,956	99,882	87,480	89,466	94,200	574,678
HOLDENVILLE DISTRICT:							
Daily average	1,414	2,574	4,147	1,629	4,496	4,214	
Month	43,834	72,072	128,557	49,170	139,376	126,420	559,429
LOVELL:							
Daily average	334	257	243	232	287	274	
Month	10,354	7,196	7,533	6,960	8,897	8,230	49,160
MARSHALL:							
Daily average	1,739	1,620	1,483	1,595	1,574	1,581	
Month	53,909	45,360	45,973	47,850	48,794	47,430	289,316
MANFORD:							
Daily average	1,440	1,809	1,750	1,654	1,663	1,647	
Month	44,646	50,652	54,250	49,620	51,553	49,410	300,125
MUSKOGEE DISTRICT:							
Daily average	1,402	1,198	1,057	1,210	1,178	1,066	
Month	43,462	33,544	32,767	36,300	36,518	31,980	214,571
NOWATA COUNTY:							
Daily average	4,682	4,742	4,719	4,692	4,686	4,410	
Month	145,328	132,776	146,289	140,760	144,646	132,300	842,099
OKEMAH:							
Daily average	602	640	621	502	552	527	
Month	18,648	17,920	19,251	15,240	17,143	15,810	104,212

(Continued on Next Page)

000 feet a day from the Wilcox sand at 5,122-44 feet.

Keokuk Falls Discovery

The Greater Seminole area, which has been producing for seven years, was the scene of development that resulted in the finding of two new pools. One of the discoveries was on a unit block of 1,200 acres, northeast of the Searight Pool, in Seminole County. The block is located in Sections 35-11-6 and 2-10-6. The discovery well was drilled by the Carter Oil Co., Gypsy Oil Co. and Sinclair Prairie Oil Co. It was No. 1 Community, C N L NW NE Section 2-10-6, south of the community of Keokuk Falls. The well made 2,327 bbls. of oil the first 23 hours from the Misener sand at 4,090-4,106 feet. This well extended the production in the Greater Seminole Field about 5 miles to the north of the Searight Pool. The gas in the well was estimated at 2,000,000 feet a day. The well has been shut in since it took its 10-day production test, immediately after its completion.

The same companies drilled the north offset to this test and after drilling to the Wilcox sand at a total depth of 4,488 feet where the well found water, it was being plugged back to the Hunton lime to test a showing of oil.

The Barnsdall Oil Co.'s No. 1 Deere, SW cor. NW NW Section 36-11-6, in the Keokuk Falls area of Seminole County, which was seeking to extend the Misener sand production in the area, found water in the Wilcox sand and was abandoned at a total depth of 4,393 feet. It was about 1½ miles northwest from the discovery well in the Keokuk Falls area.

Sasakwa Area

Another well that opened a new producing area in the Greater Seminole area was the Stanolind Oil & Gas Co. and Amerada Petroleum Corp.'s No. 1 Palmer, NW cor. Section 36-6-7, near the townsite of Sasakwa, Seminole County. The nearest production to this wildcat was about 2½ miles to the southeast in the Allen Pool. The well flowed 2,525 bbls. of oil in 24 hours from the Wilcox sand at 4,040-51 feet. The first showing of oil was found in the Simpson sand at 4,026 feet where it averaged around 800 bbls. a day. The well was near the townsite of Sasakwa and all of the town lots were leased and a town lot drilling campaign is expected during the last half of the year.

The Palmer well was shut in to 50 bbls. a day during the balance of the first half of the year. It was the only well drilled in the field during the first part of the year, on account of the low crude oil prices and small market demand for the crude.

West Holdenville Development

At the beginning of the new year the West Holdenville Pool, in Hughes County, was extended to the south and west by the Murrah & Bohannon's No. 1 Jacobs, NW cor. SE NE Section 16-7-8. The well made oil at the rate of 40 bbls. an hour and 20,000,000 feet of gas a day, from the Booch sand at 2,860-2,929 feet.

The West Holdenville Field was opened in April, 1932, and it was further developed until it was the most active field in the state.

In January a well on the east edge of the field found a new producing horizon. The well was Milam & Capshaw's No. 1 Holmes, SE cor. SW Section 11-7-8. It made 3,000,000 feet of gas a day from 1,597-1,600 feet.

In February potential tests on 24 wells in the West Holdenville Field showed a total of 19,497 bbls. a day on a four-hour test. The gas volume of the 24 wells under the open flow tests totaled 424,591,000 feet a day.

Sacred Heart Pool Extended

In the Sacred Heart area of Pottawatomie County an extension well swabbed 365 bbls. of oil in 10 hours. The well was Watchorn Oil & Gas Co.'s No. 1 Zoeller, NW cor. SE Section 5-6-5, in the South St. Louis area. This well extended production a quarter of a mile to the south.

A new pool was found in southeastern Pontotoc County in February by W. A. Delaney and others in No. 1 Harden, NE cor. SW Section 30-2-7. The well found the Gilcrease sand at 1,170-85 feet, where it made 30,000,000 feet of gas a day with 505 pounds rock pressure. The 6-inch casing was landed at 1,170 feet. All of the offsets were drilled and completed. The wells are all shut in at this time until market outlet can be found for the gas. A number of wildcats were started in the vicinity of these gas wells, but none had reached a pay horizon on June 30.

New Layton Sand Pool

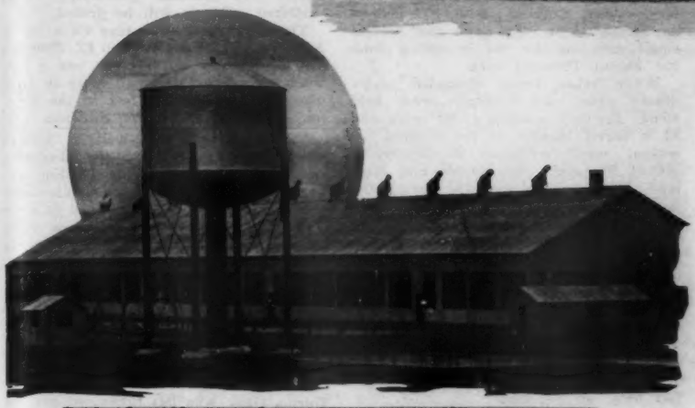
A new pool was discovered in Creek County in Township 18-8, east of the old Cushing Field. The Layton sand yielded several large wells from sand found at 1,200 to 1,300 feet. There were about 10 wells completed in the area during the first six months and some of these were rated from 800 to 1,300 bbls. a day in initial output. The production was not restricted as one purchasing company nominated all the crude oil from these wells.

The largest well completed in the group

Oklahoma (Continued)

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
OKLAHOMA CITY:							
Daily average	190,242	150,110	199,470	102,892	150,554	193,057	
Month	3,107,502	4,203,080	6,183,570	3,086,760	4,667,174	5,791,710	27,039,796
OKMULGEE DISTRICT:							
Daily average	5,058	5,231	4,936	5,016	4,649	4,675	
Month	156,798	146,468	153,016	150,480	144,119	140,250	891,131
OLEAN-RIPLEY:							
Daily average	1,242	1,230	1,156	1,069	1,058	1,042	
Month	38,502	34,440	35,836	32,070	32,798	31,260	204,906
OSAGE (outside Burbank):							
Daily average	16,490	16,405	17,681	17,739	16,181	16,916	
Month	511,190	459,340	548,111	532,170	501,611	507,480	3,059,902
PONCA CITY-BLACKWELL DISTRICT:							
Daily average	2,238	2,205	2,156	2,172	2,161	2,152	
Month	69,378	61,740	66,836	65,190	66,991	64,560	394,695
ROBBERSON:							
Daily average	1,672	1,707	1,511	1,508	1,467	1,470	
Month	51,832	47,796	46,841	45,240	45,477	44,100	281,286
ROGERS COUNTY:							
Daily average	1,451	1,456	1,452	1,459	1,433	1,419	
Month	44,951	40,768	45,012	43,770	44,423	42,570	261,494
PAPOOSE:							
Daily average	1,743	1,670	1,581	1,494	1,379	1,422	
Month	54,188	46,760	49,011	44,820	42,749	42,660	280,188
SEMINOLE FIELD:							
Seminole City—							
Daily average	10,583	10,404	10,277	9,595	9,451	9,973	
Month	328,073	291,312	318,587	287,850	292,981	299,190	1,817,993
East Seminole—							
Daily average	945	867	932	873	852	1,029	
Month	26,939	24,276	28,892	26,190	26,412	30,870	163,579
Bowlegs—							
Daily average	10,685	10,599	10,053	9,040	9,103	9,519	
Month	331,235	296,772	311,643	271,200	282,193	285,570	1,778,613
Little River—							
Daily average	18,350	17,811	17,767	15,576	16,319	15,224	
Month	568,850	498,708	550,777	467,280	505,889	456,720	3,048,224
East Little River—							
Daily average	1,332	1,236	1,246	1,166	1,147	1,182	
Month	41,292	34,608	38,626	34,980	35,557	35,460	220,523
East Earlsboro—							
Daily average	17,169	15,553	15,507	15,225	14,742	15,732	
Month	532,239	435,484	480,717	456,750	457,002	471,960	2,834,152
Earlsboro—							
Daily average	14,280	13,263	13,574	12,974	12,762	11,546	
Month	442,680	371,364	420,794	389,220	395,622	346,380	2,366,060
South Earlsboro—							
Daily average	2,000	1,810	1,767	1,675	1,571	1,382	
Month	62,000	50,680	54,777	50,250	48,701	41,460	307,868
Searight—							
Daily average	2,918	2,682	3,011	2,837	2,632	3,070	
Month	90,453	75,096	93,341	85,110	81,592	92,100	517,697
Mission—							
Daily average	5,926	5,942	5,809	5,532	5,320	4,954	
Month	183,706	166,376	180,079	165,960	164,920	148,620	1,009,661
Carr City—							
Daily average	8,361	8,396	8,114	7,484	7,500	7,532	
Month	259,191	235,088	251,534	224,520	232,500	234,960	1,437,793
Maud—							
Daily average	1,548	1,401	1,565	1,574	1,544	1,513	
Month	47,988	39,228	48,515	47,220	47,864	45,390	276,205
Total Seminole Field							
Daily average	94,021	89,964	88,622	83,551	82,943	82,956	
Month	2,914,651	2,518,992	2,778,282	2,506,530	2,571,233	2,488,680	15,778,368
ST. LOUIS-PEARSON:							
Daily average	18,351	18,597	18,303	17,845	18,402	19,939	
Month	568,881	520,716	567,393	535,350	570,462	598,170	3,360,972
SASAKWA:							
Daily average	1,501	1,407	1,738	1,808	1,391	1,280	
Month	46,531	39,396	53,878	54,240	43,121	38,400	275,566
SHOLEM ALECHEM:							
Daily average	5,995	6,114	6,076	5,987	5,932	5,814	
Month	185,845	171,192	188,356	179,610	183,892	174,420	1,083,315
TONKAWA:							
Daily average	4,930	4,773	4,794	4,783	4,335	4,254	
Month	152,830	133,644	148,614	143,490	134,385	127,620	840,583
WASHINGTON:							
Daily average	3,791	3,803	3,720	3,716	3,644	3,610	
Month	117,521	106,484	115,320	111,480	112,964	108,300	672,069
WEWOKA:							
Daily average	3,910	3,887	3,869	3,203	3,782	3,446	
Month	121,210	108,836	119,939	96,090	117,242	103,380	666,697
YALE-JENNINGS:							
Daily average	3,626	3,495	3,548	3,493	3,385	3,266	
Month	112,406	97,860	109,988	104,790	104,935	100,800	630,779
FISH:							
Daily average	2,611	2,438	2,451	2,616	2,492	2,019	
Month	80,941	68,264	75,981	78,480	77,252	60,570	441,488
TULSA DISTRICT:							
Daily average	4,034	3,559	3,938	3,878	4,017	4,103	
Month	125,116	99,652	122,078	116,340	124,527	123,090	710,803
CUSHING DISTRICT:							
Daily average	13,799	13,890	14,376	14,616	14,684	14,011	
Month	427,769	388,920	445,656	438,480	455,204	420,330	2,576,359
ASHER-WANETTE:							
Daily average	4,550	3,861	3,939	3,638	3,470	3,144	
Month	141,050	108,108	122,109	109,140	107,570	94,320	682,297
MADILL:							
Daily average	201	197	193	206	173	176	
Month	6,231	5,516	5,982	6,180	5,363	5,280	34,552
HEWITT:							
Daily average	5,547	5,552	5,518	5,010	5,095	5,161	
Month	171,957	155,456	171,058	150,300	157,945	154,830	961,546
GLENN POOL DISTRICT:							
Daily average	4,594	4,850	4,748	4,983	4,716	4,612	
Month	151,714	135,800	147,188	149,490	146,196	138,360	868,748
PERRY DISTRICT:							
Daily average	1,174	1,096	813	699	891	1,045	
Month	36,394	30,688	25,203	20,970	27,621	31,350	172,226
TATUMS:							
Daily average	3,788	3,615	3,915	3,891	3,941	3,945	
Month	117,459	101,220	121,365	116,730	122,171	118,350	697,295
Daily average	404,864	448,964	488,556	390,667	436,188	477,969	442,868
Total first six months 1933	12,550,784	12,570,992	15,456,236	11,720,010	13,521,580	14,329,079	80,157,672
Total first six months 1932	13,664,149	11,806,190	12,998,796	12,718,020	13,169,420	12,757,230	77,113,805
Total first six months 1931	14,850,952	13,531,980	16,627,687	16,815,990	17,333,867	16,078,200	95,238,677
Total first six months 1930	20,802,954	17,977,624	19,115,406	19,541,310	20,587,503	19,754,700	117,779,497
Total first six months 1929	22,575,874	20,464,164	20,838,242	20,235,390	21,346,453	20,561,112	126,020,255
Total first six months 1928	20,978,320	19,294,426	20,162,524	18,096,920	19,443,355	18,482,931	117,458,536
Total first six months 1927	19,035,426	18,752,343	22,480,921	22,208,130	23,258,462	23,630,330	129,565,611
Total first six months 1926	13,674,813	15,392,016	14,312,886	14,468,190	14,507,008	14,072,510	82,428,423

The illustrations reading from the top down show: An Oil Barge, an Elevated Tank at a compressor station, a Bubble Tower, a group of Storage Tanks equipped with Wiggins Roofs, and a Spheroid.



HORTON
Steel Platework for the Oil Industry

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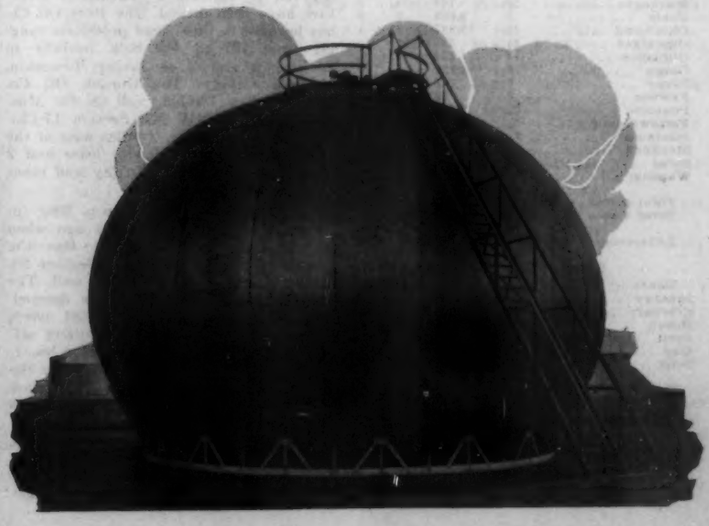
Our four modern fabricating shops and our experienced field erection crews enable us to supply almost any requirement promptly. In connection with the building of oil storage tanks, our long experience with evaporation-stopping roofs and pressure containers has made us in reality specialists in "evaporation engineering". We can render complete service in this field to meet any need.

There is no obligation in discussing your problems. Address our nearest office for data on any type of steel platework, cost estimates, or literature.

CHICAGO BRIDGE & IRON WORKS

DALLAS	1241 Burt Bldg.	NEW YORK	3147 Hudson Terminal Bldg.
HOUSTON	2919 Main Street	PHILADELPHIA	1615-1700 Walnut St. Bldg.
TULSA	1406 Philcade Bldg.	BOSTON	1517 Consolidated Gas Bldg.
BIRMINGHAM	1536 Fiftieth St. N.	SAN FRANCISCO	1054 Rialto Bldg.
CHICAGO	2128 Old Colony Bldg.	SEATTLE	4323 Smith Tower
DETROIT	1514 Lafayette Bldg.	LOS ANGELES	1423 Wm. Fox Bldg.
CLEVELAND	2204 Rockefeller Bldg.	HAVANA, CUBA	Edificio Abreu 402

Fabricating plants in BIRMINGHAM, CHICAGO and GREENVILLE, PA.



was J. E. Crosbie, Inc.'s No. 2 Escoe, NW cor. NE SW Section 26-18-8, which made 1,300 bbls. on its initial production test for 24 hours, after an 80-quart shot in the Layton sand at 1,312-47 feet.

The Roxana Pool, in Logan County, which has become important since the discovery of the School Land sand with deeper drilling of old producers, was believed to have been defined when the Shell Petroleum Corp.'s No. 6 Sebronck, SE cor. SW NE Section 30-19-4w, found water in the School Land sand at 6,258 feet. The well was drilled to the Siliceous lime at 6,570-6,608 feet, where it was abandoned without finding any showing of oil or gas. This was the first test in the surrounding area to miss oil production in the School Land sand and is located on a lease on which were a number of wells producing from this horizon.

Deepest Drilling Well in State

In January the Denver Producing & Refining Co.'s No. 1 Noe, NW cor. SW SW Section 34-10-10w, a wildcat in the northern part of Caddo County, started spudding. The structure on which the test is being drilled is considered a large one and is estimated by some to be 20 miles long and 10 miles wide and is on the edge of the Anadarko Basin. It was drilling at 9,250 feet at the close of June and is the deepest drilling well in the state. A seismograph was used in working out the structure.

Southern Discovery

In April a new gas pool was discovered about 5 miles northwest of the Tatums Pool, in Carter County. The well was E. M. Boring and Amos Drilling Co.'s No. 1 Riddle, NE cor. NW SW Section 4-1s-3w, which was completed for 30,000,000 feet of gas a day from sand series at 1,820-2,039 feet. The 8-inch casing was cemented at 1,798 feet. It was the only well completed in the area during the first six months of 1933.

A number of wells were completed in the Tatums Pool, in Carter County, the largest completion during the first half of the year being the Samedan Oil Co.'s No. 1 Hopson, SE cor. NE Section 25-1s-3w. It flowed 750 bbls. of oil in 11 hours and was estimated at 2,000 bbls. a day from sand at 2,400-2,591 feet.

OKLAHOMA

Summary of Wells Completed First Six Months of 1933

County—	Comp.	Prod.	Dry	Gas
Atoka	16	31	10	0
Carter	24	6,608	6	1
Comanche	2	6	1	0
Caddo	3	75	1	0
Creek	92	5,485	36	3
Cotton	2	0	2	0
Garfield	1	75	0	0
Grady	1	0	1	0
Haskell	2	0	2	0
Hughes	45	7,025	7	3
Jefferson	14	571	4	1
Kay	3	39	1	1
Kiowa	1	0	1	0
Lincoln	5	1,139	1	0
Logan	3	3,091	1	0
Latimer	1	0	1	0
Marshall	7	35	3	1
McIntosh	3	25	2	0
McCurtain	1	0	1	0
Muskogee	20	168	11	2
Noble	6	3,658	1	0
Oklahoma	30	75,027	2	1
Okmulgee	44	336	22	2
Okfuskee	14	429	3	1
Osage	28	4,123	4	0
Payne	6	761	4	0
Pawnee	9	66	3	1
Pontotoc	29	2,324	10	3
Pottawatomie	22	6,805	7	0
Seminole	21	13,412	6	0
Stephens	24	261	16	0
Tulsa	21	262	11	3
Wagoner	25	435	11	2
Total 6 mos. 1933	522	133,342	193	30
Total 6 mos. 1932	445	320,573	159	57
Difference	77	186,231	33	27

Summary by Months

Month—	Comp.	Prod.	Dry	Gas
January	90	31,567	42	2
February	81	12,169	30	4
March	80	10,198	25	6
April	85	42,049	31	4
May	98	22,339	36	8
June	88	14,860	28	6
First half 1933	522	133,342	193	30
First half 1932	445	320,573	159	57
First half 1931	714	1,431,798	247	117
First half 1930	1,098	2,470,915	534	191
First half 1929	1,749	455,960	618	149
First half 1928	1,231	324,155	657	292
First half 1927	2,365	963,276	727	247
First half 1926	2,645	240,358	789	270
First half 1925	2,486	444,949	721	239

Michigan Field More Active in First Half of 1933 Than in Past Years; Prospects Good

By PAUL A. ELLIOTT

The year 1933 will show the greatest drilling activity since 1929 in proved, semiwildcat and wildcat areas in the State of Michigan judging by the record for the first six months.

A total of 136 permits, or more than half the annual number since 1928 and 1929 when the Muskegon Field was at its height, were issued from January 1, 1933, to June 30, 1933, mostly for the Mount Pleasant Field and the surrounding territory.

During the same period a total of 122 completions were made, 77 of them for oil, 2 for natural gas and 43 dry. Of the oil wells, 71 are located in the Mount Pleasant area, 2 in Oceana County, 2 in Muskegon County, and 2 in Saginaw County, where the first commercial oil field in the State was opened in 1925.

In Greendale and Porter Townships, Midland County, the most extensive pool outside of the original Chippewa-Greendale Pool, with which the Mount Pleasant Field was opened in the spring of 1928, has been developed during the past six months. From present successful wells it is believed to be at least 7 miles and possibly 11 miles long extending in a southeasterly trend from the prolific East Pool opened in July, 1931.

This new area in which more than 25 commercial wells, one of them a 5,000-bbl. initial producer, already have been completed was indicated late in 1932 by the success of the Pure Oil Co.'s No. 1 Mattie Yost and others, W half Section 35-14n-2w, Greendale Township, Midland County, when it came in for 1,155 bbls. natural and was boosted to 2,000 bbls. a day with a shot of acid.

New Field in Porter Township

This was in early December, 1932. It was three months later, or early in March, 1933, before the well which really opened the new field in Porter Township, 11 miles southeast of the original Mount Pleasant producing area, was brought in.

It was the Michigan Pacific Oil & Gas Co.'s No. 2 Joseph Otway, NE SW Section 22-13n-1w. It first made about 150 bbls. a day, but rushed in for an increased flow of 3,207 bbls. when drilled about 35 feet deeper into the Dundee limestone the first week in March.

In four months 20 other producers, the largest of them the Pure Oil Co.'s No. 1 State-Porter, C NW NW SE Section 15-13n-1w, Porter Township, which gauged 190 bbls. in 40 minutes, have been completed in Porter Township.

Between No. 1 Mattie Yost and No. 2 Otway, a stretch of 7 miles, several wells believed to indicate a continuous structure have been drilled. The Pure Oil Co. has brought in three good producers ranging from 127 to 400 bbls. initially in Sections 1 and 2 of Jasper Township, Midland County. The Gordon Oil Co. also struck a 180-bbl. well on the Muscott lease, SE NW NE Section 17-13n-1w, Porter Township, 2 miles west of the Pure Oil Co.'s State-Porter lease and 2 miles northwest of the Otway and other wells in Section 22.

This entire development was first indicated more than 18 months ago when the Michigan Pacific Oil & Gas Co. brought in No. 1 Otway in Section 26, Porter Township, as a 50-bbl. well. The discovery of the big pool was delayed, however, by two dusters drilled north and south of the producer as direct offsets. No. 2 Otway is northwest of No. 1.

Oil Production first began to show the increase from the new pool in April when the daily average advanced from 14,000 to 15,000 bbls. Subsequent months have continued the increase until the first half of 1933 will see a total of at least 2,700,000 bbls. of oil produced in Michigan.

The old Muskegon Field has been making about 25,000 bbls a month, or 800 bbls. a day, Saginaw about 100 bbls. a day from a few old wells and several small ones and the rest is coming from the Mount Pleasant area.

While other fields struggled under drastic price cuts Michigan crude held steady for four months at 95 cents and $1 a barrel because of the demand for several small refineries in Muskegon, Mount Pleasant, Big Rapids and Midland. The lowest price paid during the past six months was that of 75 cents posted May 8 for Mount Pleasant crude by the Pure Oil Co. Muskegon crude continued to bring $1 or more a barrel under contract.

Renewed activity resulted in Vernon Township when the Mellon-Pollock Oil Co.'s No. 1 Brief, in Section 22-16n-4w, was deepened and increased from a declining production of 45 to 700 bbls. a day, or nearly as high as the initial of 750 bbls. on September 29, 1931. Ten wells were completed, five for oil, one for gas and four dry during subsequent drilling in the township.

New Development Started

An interesting new development has been started as a result of the success of the Wittmer Oil Co. in its No. 1 Saray Cashen, NW NE SW Section 30-15n-3w, Denver Township, south of the East Pool, which made 25 bbls. at 3,665 feet deep.

Two wells now are drilling as a result, Brehm and Melvin's No. 1 Smith, Section 23-15n-3w, Denver Township, 4 miles east of the Leaton Pool and 3 miles north of the old Chippewa Pool, and the Michigan Gas & Oil Co.'s No. 1 Busche, Section 10-16n-3w, Wise Township, near the village of Loomis.

Thompson & Fortney's No. 1 Gilbert A. Currie, SW cor. Section 16, Mount Haley Township, is another interesting semiwildcat test. Several other new Vernon Township tests also are in progress.

The most likely looking areas for new wildcat activities during the last half of 1933 include Oceana County, where two producers were completed; Mecosta County, where James M. Taggart and others struck a flow of 4,195,000 feet a day of natural gas at 1,481-85 feet in the Michigan series above the Marshall; Clare County, where gas field operations recently have been resumed by W. J. Sovereign after about a year's litigation over the right to drill on the Pere Marquette Railroad right of way; Saginaw County, where two small oil wells were completed in Birch Run Township; and Muskegon County, where the Muskegon Oil Corp. is preparing to drill structure test wells in two sections located southeast of the old field.

Tuscola, Ogemaw, Gratiot, Shiawassee, St. Clair and Newaygo Counties also may get a play. Antrim County, where a shallow wildcat recently was started by Muskegon interests, is another possible center of activity.

Oil and Gas in Vassar

The Pure Oil Co. had a show of oil and gas in its George Veitengruber well, in Section 27, Vassar Township, Tuscola County.

The Pure Oil Co. also struck a flow of 250,000 feet a day of gas in its Mills estate well, SE NW SE Section 36-21n-3w, Mills Township, Ogemaw County, before it was abandoned at 2,682 feet. Four tests in Gratiot County were dry and abandoned but there is still some interest because of the dry gassers previously completed there.

Jonesfield Township, Saginaw County, may see a little play as the result of leasing programs which have been conducted for some time. Jonesfield adjoins Porter and Midland Townships. Other scattered wildcats will be drilled.

The Newaygo Oil & Gas Co.'s No. 1 A. J. Bates, NE SE Section 12, Sherman Township, Newaygo County, set a new depth record for Michigan early in June when it reached 6,418 feet in the Trenton caprock in the lower Silurian.

The Newaygo-Bates well is located about half way between the Muskegon and Mount Pleasant Fields. Drilling was started in 1928 after the two main fields had been opened. It was decided to make a deep test of the hole in March, 1929, and it has been drilling intermittently since then.

When the half year closed the Mount Pleasant area was still the center of activity with 25 drilling wells, 5 temporarily shut down, 2 testing and 5 building rig.

Several rigs were being erected in the Oceana Field by James E. Flanigan, of Toledo, Ohio, who has taken out permits for at least four new tests near No. 1 E. Mitchell, the second producer in the Oceana Field.

MICHIGAN FIELDS

Summary of Wells Completed for First Half of 1933

Month—	Comp.	Prod.	Dry	Gas
January	13	2,005	3	1
February	15	540	7	0
March	15	1,655	4	2
April	24	9,825	5	0
May	23	5,100	3	0
June	12	2,925	2	0
First half 1933	102	22,350	27	3
First half 1932	66	41,655	22	7
Difference	36	19,305	5	4

Summary by Counties

County—	Comp.	Prod.	Dry	Gas
Muskegon	3	0	3	0
Isabella	11	1,060	3	2
Midland	70	21,290	7	0
Clare	3	0	3	0
Gratiot	4	0	4	0
Oceana	3	75	2	0
Cass	1	0	1	0
Saginaw	3	25	1	0
Mecosta	1	0	0	1
Wexford	1	0	1	0
Ogemaw	1	0	1	0
Newaygo	1	0	1	0
First half 1933	102	22,350	27	3

Veterans of Pipe Line Enjoy Happy Reunion

OIL CITY, Pa., July 22.—Six retired pipe line veterans, whose ages totaled 469 years, held a happy reunion and luncheon at the Wanango Country Club. The veterans are all former employes of the Union Pipe Line Co., between the years of 1873 and 1876, and so far as they know are the only survivors of the company's employes at that time.

Those who took part in the unusual gathering were: O. S. June, of Lima, Ohio, retired, former vice president and general manager of the Buckeye Pipe Line Co.; T. M. Magee, retired, of Grove City, former superintendent and director of the South West Pennsylvania Pipe Line Co., with headquarters at Pittsburgh; F. D. Williams, of Oil City, retired, former president and director of the National Transit Co.; W. W. Imus, of Silver Creek, N. Y., retired, formerly associated with the Producers & Refiners Oil Co.; Harry P. Clark, of Emlenton, retired, former agent of the National Transit Co., at Emlenton; and C. A. McLouth, of Oil City, retired, former secretary and assistant treasurer of the Southern Group of Pipe Lines at Oil City.

Mr. June related how he worked with the late P. C. Boyle at Parker and of the laying of the first gas line from the Speechley gas well to Titusville in the winter of 1866.

The veterans ranged in age from 77 to 81 years with Mr. June being the senior member.

First Half Year in Kansas Saw More Completions and Production Than Same Period in 1932

By W. A. SPINNEY
Staff Correspondent, Kansas Fields

Kansas was fortunate in the first half of 1933 to be one of the few states that found its crude oil supply in great demand. The local purchasers found it hard to secure enough crude oil to meet their demands on account of the low allowables the state authorities kept in force notwithstanding the larger nominations asked for by all the purchasing companies. Two hundred and forty wells were completed in the State in the first six months of the year, an increase of 10 over the record of the first half of 1932. One wildcat pool was opened in the six months and this and a deeper sand in aother area were the only new sources of crude found.

The new pool was discovered by the Atlantic Oil Producing Co. in Stafford County in the central western part of the State and the discovery well was the only development. It was shut in after making a production test awaiting a market outlet. The discovery well was located about 11 miles from the nearest other production.

The other important discovery was the finding of production in the Wilcox sand in the Hollow Pool in Harvey County, the equivalent of finding a new pool, as it is believed that a large crude supply underlies the greater portion of the proven area of the Hollow Field. The Wilcox sand production was found in wells that were 2 miles apart and the development was getting under way in an active manner at the close of June.

The Chase townsite in Rice County was beginning to be considered an important area at the close of the first half of the year. A 2,400-bbl. well was completed in June on the townsite from the Siliceous lime and the completion of this well was expected to be the forerunner of an active drilling campaign. In the other western counties development was slow on account of the low crude oil prices that prevailed during most of the first half of the year.

The most active development in Kansas was in the Mabee Pool, in McPherson County, and in the Hollow Pool, in Harvey County.

Four Pays in Hollow Pool

One of the important features of the first half of the year was the finding of the Wilcox sand in the Hollow Pool, Harvey County, in May, giving this field its fourth producing horizon. The discovery Wilcox sand well was Producers & Refiners Corp.'s No. 2 Martens, in Section 19-22-3w. Oil rose 1,200 feet in the hole and it swabbed 100 bbls. an hour from sand at 3,510-14 feet.

In April the Magnolia Petroleum Co.'s No. 1 Schmidt, in Section 30-22-3w, in the south end of the Hollow Pool, found the third producing horizon, the Kansas City-Lansing lime, at 2,490-2,520 feet, where it made around 100 bbls. a day. It was later treated with acid and made 20 bbls. an hour.

These two additional producing horizons in the Hollow Pool give this territory added importance as the majority of the wells in the field found their production in the Hunton lime. There are approximately 11 chat wells in the field.

The Hollow Pool is the only place in the State where oil has been found under the Hunton lime. In all other places in Kansas water has been found in formations below where the Hunton lime has carried oil. The present indications are that the Wilcox sand will be productive in two parts of the Hollow Field, as there are two high points in the pool, one in the south end that is productive and the other in the northern part of the area, around Section 8-22-3w.

The field was discovered in December, 1931, when a wildcat well found the Hunton lime productive and it soon became an important producing area after a number of years of wildcatting in the county. The discovery well was Frank Hollow and others' No. 1 Church acre, SW cor. NW Section 20-22-3w, which made 1,450 bbls. the first 24 hours. It was drilled on a lease less than 1 acre in size. The pool is located on the Abilene Arch, the same as the Voshell Pool, in McPherson County, which also produces from the Wilcox sand, and is located several miles northeast.

The Hollow Pool was extended a mile north by the completion of Carter Oil Co. and others' No. 1 Schmidt, SE cor. SW NW Section 17-22-3w, in March. The well swabbed at the rate of 80 bbls. an hour from the Hunton lime at 3,450-61 feet.

Later in March the pool was given a further extension to the north when the Texas Co. and McComb's No. 1 Dyck, SW cor. NE SW Section 8-22-3w, found oil in the chat at 3,170-3,201 feet. The well made 1,000 bbls. of oil a day and 10,000,000 feet of gas.

Stafford's New Pool

The new pool in Stafford County was opened in May, giving that county its second producing area. The Atlantic Oil Producing Co.'s No. 1 Gates, NW cor. SE Section 27-21-13w, swabbed 240 bbls. of oil the first 24 hours from Siliceous lime at 3,698-3,704 feet.

The well was located in the center of a 5,000-acre block of leases controlled by the Atlantic Oil Producing Co. It was drilled after a core-drilling and seismograph survey of the area. It is about 11 miles northwest from the nearest other production, in the Richardson Pool, in eastern Stafford County. The discovery well was shut in awaiting a pipe line outlet.

In March a test for oil and gas was started in Trego County, Central Commercial Oil Co.'s No. 2 King, in Section 20-13-21w. At the close of June it was shut down at 3,209 feet. No. 1 King, the

Kansas

Daily Average and Monthly Production First Six Months of 1933

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
SEDGWICK COUNTY:							
Wright—							
Daily average	2,843	2,695	2,669	2,657	2,416	2,274	
Month	88,133	75,460	82,739	79,710	74,896	68,220	469,158
Greenwich—							
Daily average	3,090	3,316	4,129	5,356	5,566	5,264	
Month	95,790	92,848	128,309	160,680	172,546	157,920	808,093
Robbins—							
Daily average	176	164	154	157	137	130	
Month	5,456	4,592	4,774	4,710	4,247	3,900	27,679
Eastborough—							
Daily average	2,498	2,208	2,198	2,095	1,540	1,496	
Month	77,438	61,824	68,138	62,850	47,740	44,880	362,870
Miscellaneous—							
Daily average	629	645	602	556	688	602	
Month	19,499	18,060	18,662	16,680	21,328	18,060	112,289
MARION COUNTY:							
Florence-Urschel—							
Daily average	72	86	74	81	67	69	
Month	2,232	2,408	2,294	2,430	2,077	2,070	13,511
Peabody—							
Daily average	414	315	332	320	347	336	
Month	12,834	8,820	10,292	9,600	10,757	10,080	62,383
Covert-Sellers—							
Daily average	243	307	306	364	313	316	
Month	7,533	8,596	9,486	10,920	9,703	9,480	55,718
Lost Springs—							
Daily average	398	403	383	391	377	371	
Month	12,338	11,284	11,873	11,730	11,687	11,130	70,042
Davis—							
Daily average	393	391	396	377	396	388	
Month	12,152	10,948	12,276	11,310	12,276	11,640	70,602
BUTLER COUNTY:							
Elbing—							
Daily average	1,335	1,455	1,330	1,358	1,335	1,304	
Month	41,385	40,740	41,230	40,740	41,385	39,120	244,600
Potwin—							
Daily average	283	286	319	306	348	326	
Month	8,773	8,008	9,889	9,180	10,788	9,780	56,418
South Augusta—							
Daily average	735	705	781	783	986	833	
Month	22,785	19,740	24,211	23,490	30,566	24,990	145,782
North Augusta—							
Daily average	657	678	629	681	633	629	
Month	20,367	18,984	19,499	20,430	19,313	18,870	117,463
Towanda—							
Daily average	1,360	1,332	1,388	1,861	1,866	1,847	
Month	42,160	37,296	43,028	55,830	57,846	55,410	291,570
Cameron-Robinson—							
Daily average	377	369	311	342	342	335	
Month	11,687	10,332	9,641	10,260	10,602	10,050	62,572
Sluss—							
Daily average	146	144	129	160	121	132	
Month	4,526	4,032	3,999	4,800	3,751	3,960	25,068
Nuttle-Koogler—							
Daily average	2,092	1,965	2,004	2,012	2,103	2,069	
Month	62,062	54,740	62,124	60,360	65,193	61,980	366,279
Wilson-Dunkle—							
Daily average	1,079	997	1,071	1,085	1,110	1,063	
Month	33,449	25,396	33,201	32,550	34,410	31,890	199,896
Eldorado—							
Daily average	4,780	4,225	4,795	4,812	4,948	4,862	
Month	148,180	118,300	148,645	144,360	153,388	145,890	858,763
Smock—							
Daily average	159	152	163	160	156	152	
Month	4,930	4,256	5,053	4,800	4,836	4,560	28,434
Leon-Weaver—							
Daily average	1,959	1,896	2,036	2,061	1,526	1,607	
Month	60,729	52,988	63,116	61,830	47,306	48,219	334,279
Fox-Bush—							
Daily average	718	740	614	674	625	631	
Month	22,258	20,720	19,034	20,220	19,375	18,930	120,537
Douglass—							
Daily average	88	84	83	84	81	82	
Month	2,728	2,352	2,573	2,520	2,511	2,460	15,144
Keighly—							
Daily average	257	248	246	256	193	190	
Month	7,967	6,944	7,626	7,740	5,828	5,700	41,805
Benton—							
Daily average	49	36	44	35	36	36	
Month	1,519	1,008	1,364	1,050	1,116	1,080	7,137
Blankenship—							
Daily average	365	325	520	541	495	488	
Month	11,315	9 100	16,120	16,230	15,345	14,640	82,750

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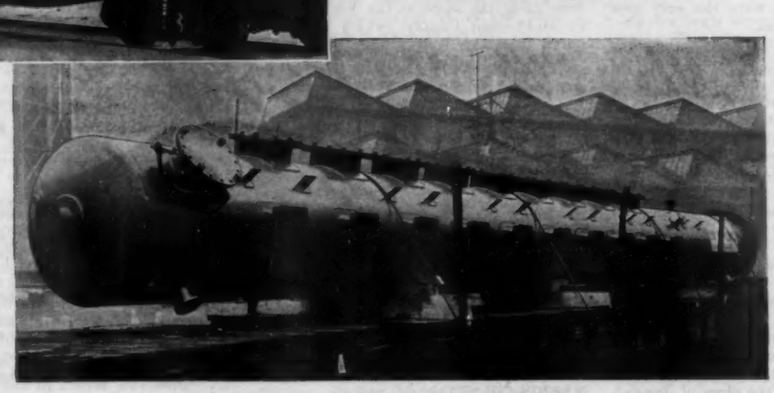
fusion welded pressure vessels ~



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discovery well, was completed in 1931 by the same company. Water broke into this well from behind the 6-inch casing and it stood on the sand for several months. It was being pumped in March and was making 10 bbls. a day.

In the Reno County gas area the third large gas well was completed in May. The well was the Olson Oil Co. and others' No. 1 Krehbiel, C SE NW NW Section 26-23-4w. It made 25,000,000 feet of gas a day from the chat formation at 3,233-3,320 feet. The rock pressure was estimated at 1,180 pounds.

KANSAS

Summary of Wells Completed First Six Months of 1933

County—	Comp.	Prod.	Dry	Gas
Barton	6	712	5	0
Butler	4	85	3	0
Chase	2	175	1	0
Cowley	12	1,670	6	1
Coffey	1	30	0	0
Dickinson	1	0	1	0
Elk	6	30	5	0
Ellis	3	152	1	0
Ellsworth	15	2,029	6	0
Franklin	1	0	1	0
Greenwood	33	331	20	0
Harvey	32	26,499	4	0
Kingman	3	438	1	0
Lyon	1	0	1	0
McPherson	69	34,925	14	5
Marion	1	0	1	0
Morris	1	0	0	1
Ness	1	0	1	0
Reno	9	1,994	0	2
Rice	7	1,466	3	0
Russell	5	641	0	0
Sedgwick	8	5,150	3	0
Stafford	3	1,373	1	0
Sumner	1	600	0	0
Woodson	13	509	5	0
Total 6 mos. 1933	240	77,909	83	9
Total 6 mos. 1932	230	82,509	77	9
Difference	10	4,600	6	0

Summary by Months

Month—	Comp.	Prod.	Dry	Gas
January	46	10,998	18	2
February	33	8,018	15	1
March	33	13,981	7	0
April	49	19,821	17	2
May	50	16,889	17	2
June	29	8,302	9	2
First half 1933	240	77,909	83	9
First half 1932	230	82,509	77	9
First half 1931	256	75,488	79	58
First half 1930	514	100,380	217	47
First half 1929	489	78,523	206	38
First half 1928	624	68,531	225	59
First half 1927	770	62,726	331	40
First half 1926	1,209	85,401	390	54

Developing Mabee Pool

The area of greatest interest during the half year was the northwestern part of Harvey County, extending over into the southern part of McPherson County. Included in this area are the Hollow Pool in Harvey County and the Mabee Pool in McPherson County.

In January the development of the Mabee Pool was in full progress as the result of the Derby Oil Co. having been granted a temporary injunction against the Public Service Commission after that body had ordered all wells shut in without any notice on December 31, 1932. The court's ruling set aside the commission's order and at that time there were four producing wells in the field and several others nearing completion.

The production in the Mabee area was extended to the north by the completion of the Mid-Kansas Oil & Gas Co.'s No. 1 J. J. Schmidt, NE cor. SE NW Section 33-21-3w. It started swabbing at the rate of 85 bbls. an hour from Hunton lime at 3,467-77 feet.

The production was extended to the south more than a mile by a well that was completed in February. It was Lee and others' No. 1 Wall, NW cor. SW Section 2-44-3w, Harvey County, which started flowing at the rate of 20 bbls. an hour from the Hunton lime at 3,495-3,507 feet.

The field was defined on the east by a dry hole. Lario Oil & Gas Co.'s No. 1 Krehbiel, SW cor. Section 27-21-3w, found the Hunton lime dry at 3,472-3,503 feet and the Wilcox sand at 3,850-53 feet with water. This well defined the eastern edge of the producing area.

Development in the Mabee Pool continued steadily since its discovery in October, 1932, and at the end of June, 1933, there were 19 producing wells with a potential of 23,726 bbls. daily.

Acid treatment of wells in the Mabee Pool was started in April and it was be-

(Continued on Page 88)

Kansas (Continued)

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
GREENWOOD AND WOODSON COUNTIES:							
Sallyards—							
Daily average	731	716	737	723	681	701	
Month	22,651	20,048	22,837	21,660	21,111	21,030	128,737
Teeter—							
Daily average	2,547	2,414	2,525	2,416	2,199	2,362	
Month	78,957	67,592	78,275	72,480	68,169	70,860	436,333
Virgil—							
Daily average	3,765	3,401	3,621	3,494	2,759	3,390	
Month	116,715	95,228	112,251	104,820	85,529	101,700	616,243
Thrall-Burkett—							
Daily average	771	781	783	791	749	755	
Month	23,901	21,868	24,273	23,730	23,219	22,650	139,641
Seeley—							
Daily average	3,746	3,546	3,646	3,494	2,977	3,362	
Month	116,126	99,288	113,026	104,820	92,287	100,860	626,407
Polhamus—							
Daily average	561	515	523	463	385	390	
Month	17,391	14,420	16,213	13,890	11,873	11,700	85,487
Miscellaneous—							
Daily average	558	478	473	453	388	407	
Month	17,298	13,384	14,663	13,740	12,028	12,210	83,323
COWLEY COUNTY:							
Winfield-New Salem—							
Daily average	3,833	3,279	3,238	3,089	2,791	2,872	
Month	118,833	91,812	103,478	92,670	86,521	86,160	579,464
Miscellaneous—							
Daily average	2,875	2,771	2,786	2,837	2,416	2,650	
Month	89,125	77,588	86,366	85,110	74,896	79,500	492,585
McPHERSON COUNTY:							
Ritz-Canton—							
Daily average	15,572	20,198	22,632	21,663	18,591	17,362	
Month	482,732	565,544	701,622	649,890	576,321	520,860	3,496,970
Voshell—							
Daily average	5,246	7,721	10,778	7,744	5,680	5,385	
Month	162,626	216,188	334,118	232,320	176,080	176,550	1,297,882
Johnson—							
Daily average	669	1,575	2,700	2,294	2,012	1,988	
Month	20,739	44,100	83,700	68,820	62,372	59,640	339,371
Nikkel—							
Daily average	1,251	2,989	5,944	7,638	7,921	8,227	
Month	38,781	83,692	184,264	229,140	245,551	246,810	1,028,238
Miscellaneous—							
Daily average	49	66	53	70	56	55	
Month	1,519	1,848	1,643	2,100	1,736	1,650	10,496
OTHER COUNTIES:							
Rooks—							
Daily average	83	81	33	28	13	20	
Month	2,573	2,268	1,023	840	403	600	7,707
Sumner—							
Daily average	3,876	4,145	3,755	3,609	3,641	3,473	
Month	120,156	116,060	116,405	108,270	112,871	104,190	677,952
Rice—							
Daily average	2,756	2,167	3,174	3,649	3,376	3,424	
Month	85,436	60,676	98,391	109,470	104,656	102,720	561,349
Russell—							
Daily average	2,167	1,931	2,118	2,252	1,849	2,152	
Month	67,177	54,068	65,658	67,560	57,319	64,560	376,342
Reno—							
Daily average	1,784	1,669	1,697	1,720	1,449	1,537	
Month	55,304	46,732	52,607	51,600	44,919	46,110	297,272
Harvey—							
Daily average	1,631	2,989	5,918	7,331	7,076	7,850	
Month	50,561	83,692	183,458	219,939	219,356	235,500	992,497
Chautauqua—							
Daily average	1,614	1,611	1,596	1,599	1,594	1,591	
Month	50,034	45,108	49,476	47,970	49,414	47,730	289,732
Elk—							
Daily average	912	903	894	858	862	888	
Month	28,272	25,284	27,714	25,740	26,722	26,640	160,372
Wilson—							
Daily average	167	165	164	162	161	162	
Month	5,177	4,620	5,084	4,890	4,991	4,860	29,622
Montgomery—							
Daily average	1,200	1,193	1,105	1,187	1,179	1,169	
Month	37,200	33,404	34,255	35,610	36,549	35,070	212,088
Edwards—							
Daily average	28	19	20	20	14	.....	
Month	868	532	620	600	424	.....	3,054
Ellis—							
Daily average	671	684	808	691	298	408	
Month	20,801	19,152	25,048	20,730	12,338	12,240	110,309
Barton—							
Daily average	68	155	196	366	601	391	
Month	2,193	4,340	6,068	10,980	18,631	11,730	53,852
Kingman—							
Daily average	42	8	326	364	271	285	
Month	1,362	224	10,106	10,920	8,401	8,559	39,503
Stafford—							
Daily average	132	214	200	286	156	.....	
Month	4,092	5,992	6,201	8,580	4,836	.....	29,701
Allen—							
Daily average	495	489	529	531	518	520	
Month	15,345	13,692	16,399	15,930	16,058	15,600	93,024
Neosho—							
Daily average	439	433	473	483	474	469	
Month	13,609	12,124	14,818	14,490	14,694	14,070	83,895
Lyon—							
Daily average	273	276	284	255	199	242	
Month	8,463	7,728	8,804	7,650	6,169	7,260	46,074
Miami—							
Daily average	1,191	1,178	1,192	1,197	1,188	1,172	
Month	36,921	32,984	36,983	35,910	36,828	35,160	214,786
Franklin—							
Daily average	279	281	279	276	279	274	
Month	8,649	7,868	8,649	8,280	8,649	8,220	50,315
Douglass-Labette—							
Daily average	22	23	.....	21	21	22	
Month	682	644	.....	630	651	660	3,267
Bourbon—							
Daily average	35	34	29	51	47	48	
Month	1,085	952	899	1,530	1,457	1,440	7,363
Linn—							
Daily average	106	105	111	112	102	103	
Month	3,286	2,949	3,441	3,360	3,193	3,240	19,469
Anderson—							
Daily average	870	873	860	857	861	862	
Month	26,970	24,444	26,660	25,710	26,691	25,860	156,335
Ellsworth—							
Daily average	2,474	1,871	2,224	1,749	1,007	1,671	
Month	76,694	52,388	68,942	52,470	31,217	50,130	331,841
Woodson—							
Daily average	39	40	39	38	37	37	
Month	1,209	1,120	1,209	1,140	1,147	1,110	6,935
Daily average	92,622	100,054	116,276	116,433	105,718	107,935	106,395
Total first six months 1933	2,871,282	2,801,513	3,604,539	3,492,990	3,277,103	3,240,150	19,287,576
Total first six months 1932	3,170,587	2,838,889	3,042,929	2,974,080	3,038,930	2,837,179	17,092,544
Total first six months 1931	3,432,475	3,241,016	3,498,598	3,281,880	3,341,366	3,175,440	20,070,775
Total first six months 1930	3,273,197	2,965,704	3,604,395	3,734,253	3,987,385	3,765,060	21,320,994
Total first six months 1929	2,861,641	2,857,968	2,951,076	3,113,740	3,665,899	3,636,150	18,784,674
Total first six months 1928	3,319,325	3,079,887	3,379,031	3,413,360	3,367,809	3,202,050	19,760,462
Total first six months 1927	3,769,879	3,352,076	3,675,143	3,516,930	3,704,314	3,437,580	21,455,922
Total first six months 1926	3,250,536	2,877,812	3,334,887	3,330,120	3,516,640	3,366,450	19,676,445

Serpentine Pools Featured Discoveries in First Six Months of 1933 in Southwest Texas

By B. D. STEVENSON
Staff Correspondent, Southwest Texas Fields

The number of completions in Southwest Texas during the first six months of 1933 was about 30 per cent greater than for the first six months of 1932 and initial production about 50 per cent greater and about 50 per cent more dry holes drilled. The number of new spots where oil or gas was found amounted to about a dozen which is about the same as for the first half of 1932.

However, the new discoveries fail to rank in importance with the discoveries of the first half of 1932 mainly on account of the North Government Wells Pool being credited to that period. In making that statement reservation must be made for the possibility that development of some of the new finds may disclose that they are of equal or even greater importance.

Serpentine Pools

Hilbig Pool in Bastrop County, discovered by the Humble Oil & Refining Co., furnished the most of the production from new pools found the first six months of 1933. The discovery well was brought in February 16, 1933. There have been some other discoveries that may ultimately prove as important or more so, but they were discovered late in the half year and development in most cases barely started, or not started at all.

One of these was another new Serpentine pool found in Bastrop by Marts & Beaven's No. 2 Reyes, which made 175 bbls. in 24 hours and was finished June 20, so late in the half year period that development of the pool will all come in the second half year.

The Sun Oil Co.'s new pool in northern Starr County was opened with the completion of the No. 1-A Guerra June 27, within three days of the close of the half-year period, and it might develop into as important a pool as any. Magnolia found new production 20 miles from any other in the No. 2 Seeligson, in southern Jim Wells County, completed April 4, 1933, but no further development was undertaken, though late in the period the Magnolia started laying pipe line the few miles from the well to the railroad. An interesting feature is that a year ago Gulf Production Co. brought in a gas well in the northern part of Jim Wells County, the first in the county.

New Duval Pools

Smith & Capps on January 4 completed No. 1 Peters, in Survey No. 178 in northern Duval County, at 2,452 feet for a big gas well. Since then the Smith & Capps interest in the deal was sold to Shasta Oil Co. and that company, with Highland Oil Co., owners of the other interest, drilled the No. 2, also a gas well, and the No. 3, a dry hole, and No. 4, a small oil well. There are indications of an oil pool, but as the half year closes it has not materialised though Brooklyn Oil Co., 2 miles northeast in the same Government Wells sand, brought in the No. 1 Sutherland, a good sized gas well spraying oil.

Smith and Hunter drilled the No. 1 Pena, 7 miles east of the North Government Wells Pool, and got a gas well at 1,931 feet and it looked for a time as though a pool would be opened there, but the gasser later went dead and a deeper test failed to find the pay.

As the half year closed, Magnolia Petroleum Co. was putting on the pump a test in Survey 363, 2 miles northwest of the North Government Wells Pool, that swabbed at the rate of 85 bbls. a day. It seems to have opened a new pool though the size of the well is small compared with those in the North Government Wells Pool.

New Discoveries

Taking the new discoveries for the half year in order, the Hilbig Pool in southern Bastrop County was brought in by Humble Oil & Refining Co.'s No. 1 Annie Hassler, 750 feet from the northwest line and 330 feet from the southwest line of the tract in the Samuel Wolfensbarger Survey, and is 330 feet also from the southwest line of the survey and about midway between the northwest and southeast lines of the survey. It topped Serpentine at 2,468 feet and was completed at 2,577 feet and flowed 78 bbls. the second hour through flow line and when pinched to one-eighth of an inch flowed 7½ bbls. an hour 38 gravity oil.

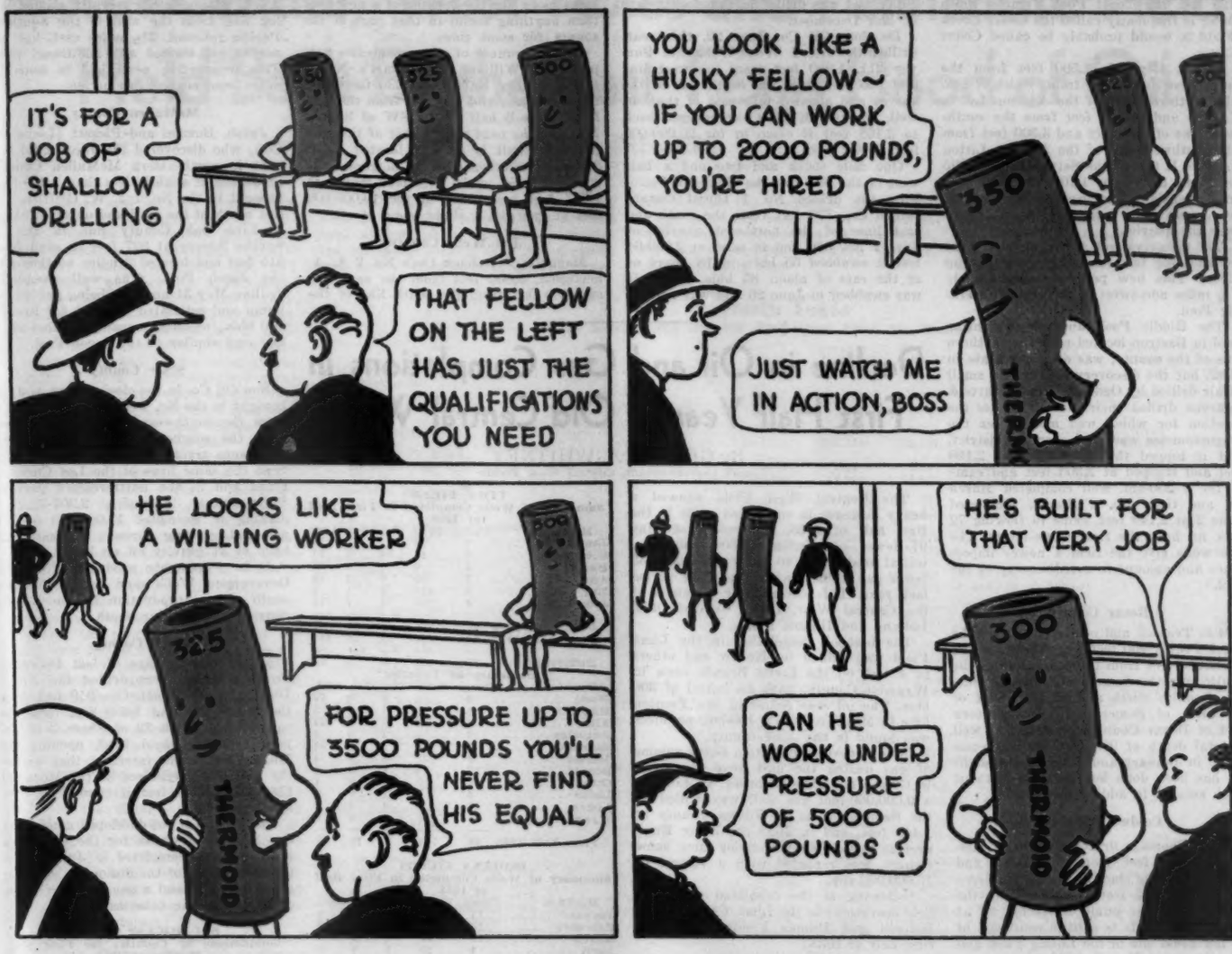
Marts & Beavens got a showing of oil that almost made a commercial well in the No. 1 Reyes in Bastrop and led to the drilling of No. 2 Reyes, which came

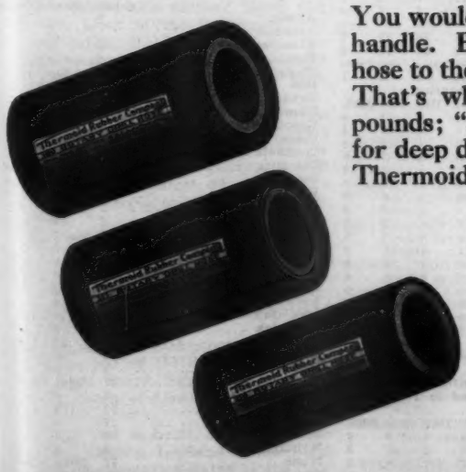
Southwest Texas

Daily Average and Monthly Production First Six Months of 1933

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
AGUA DULCE:							
Daily average	6	25	22	13	13	9	
Month	184	710	688	395	407	257	2,641
BEXAR COUNTY:							
Daily average	488	500	503	554	616	603	
Month	15,122	14,005	15,597	16,608	19,090	18,248	98,670
BRANYON:							
Daily average	38	33	42	56	45	34	
Month	1,176	920	1,300	1,674	1,390	1,032	7,492
BRUNER:							
Daily average	6,223	6,295	5,970	5,988	6,314	5,855	
Month	193,227	176,377	185,075	179,642	195,738	175,640	1,105,699
BUCHANAN:							
Daily average	46	42	44	45	42	41	
Month	1,420	1,174	1,368	1,359	1,306	1,243	7,870
CHAPMAN:							
Daily average	824	805	795	791	780	742	
Month	25,548	22,543	24,648	23,727	24,175	22,247	142,888
DALE:							
Daily average	212	221	223	244	206	204	
Month	6,576	6,183	6,911	7,320	6,382	6,115	39,487
DARST CREEK:							
Daily average	13,897	13,748	14,040	13,926	12,813	12,370	
Month	430,803	384,948	435,246	390,772	397,207	371,108	2,410,984
DUNLAP:							
Daily average	150	146	179	206	123	142	
Month	4,655	4,081	5,543	6,178	3,811	4,250	28,518
GOLIAD:							
Daily average	46	41	35	36	31	34	
Month	1,426	1,145	1,080	1,074	969	1,020	6,714
JACOBS:							
Daily average	307	280	211	234	252	251	
Month	9,519	7,846	6,543	7,027	7,810	7,522	46,267
KINGSVILLE:							
Daily average	98	104	102	93	80	81	
Month	3,032	2,910	3,164	2,803	2,488	2,435	16,832
LARREMORE:							
Daily average	55	55	52	47	44	46	
Month	1,700	1,545	1,610	1,407	1,360	1,394	9,016
LULING:							
Daily average	7,307	7,207	7,251	7,006	6,453	6,633	
Month	226,519	201,793	224,786	210,184	200,037	198,987	1,262,306
LYTTON SPRINGS:							
Daily average	549	523	530	521	453	758	
Month	17,013	14,641	16,436	15,628	14,041	22,734	100,493
HILBIG:							
Daily average	.....	47	131	170	540	722	
Month	.....	1,319	4,067	5,108	16,745	21,667	48,906
JOLIET:							
Daily average	.....	.....	.....	.....	31	27	
Month	.....	.....	.....	.....	964	805	1,769
MANFORD:							
Daily average	79	69	63	61	49	61	
Month	2,447	1,937	1,950	1,830	1,513	1,832	11,509
McMULLEN (Callihan):							
Daily average	15	50	45	54	67	67	
Month	460	1,408	1,980	1,620	2,071	2,010	9,549
MEDINA COUNTY:							
Daily average	23	24	24	24	23	29	
Month	719	670	741	729	717	694	4,279
MINERVA:							
Daily average	334	334	334	327	334	286	
Month	10,352	9,352	10,350	9,802	10,350	8,586	58,792
MIRANDO DISTRICT:							
Daily average	16,242	16,669	18,758	20,040	20,656	21,282	
Month	502,508	466,736	581,452	601,212	641,632	638,452	3,432,034
OGDEN (Bateman):							
Daily average	55	45	29	126	201	197	
Month	1,709	1,260	893	3,774	6,231	5,904	19,762
PETTUS DISTRICT:							
Daily average	3,749	3,811	3,952	3,661	3,335	3,543	
Month	116,215	106,700	122,518	108,021	103,350	106,297	663,131
SAL MAR:							
Daily average	3	15	11	5	10	10	
Month	96	428	340	162	315	290	1,632
SAXET:							
Daily average	1,893	2,122	1,982	2,176	2,836	2,686	
Month	58,830	59,410	61,447	65,248	87,918	80,576	413,429
SOMERSET:							
Daily average	1,012	990	1,012	1,097	983	916	
Month	31,406	27,725	31,403	30,219	30,479	27,471	178,703
THRALL:							
Daily average	37	35	35	34	35	40	
Month	1,148	983	1,088	1,012	1,080	1,191	6,497
TULETA:							
Daily average	541	206	212	208	218	216	
Month	16,777	5,762	6,570	6,245	6,756	6,487	48,597
WHITE POINT:							
Daily average	47	46	47	43	42	52	
Month	1,457	1,280	1,451	1,293	1,303	1,561	8,340
YOAST:							
Daily average	126	123	126	117	128	114	
Month	3,908	3,413	3,902	3,510	3,964	3,428	22,124
Daily average	54,413	54,614	56,780	56,854	57,795	58,049	
Total first six months 1933	1,686,944	1,529,203	1,760,187	1,705,575	1,791,634	1,741,484	10,215,027
Total first six months 1932	1,821,552	1,836,872	1,883,784	1,730,681	1,971,657	1,849,784	11,094,330
Total first six months 1931	2,698,916	2,362,696	2,230,534	2,211,571	2,059,454	2,000,546	12,563,721
Total first six months 1930	1,981,174	1,813,896	1,977,584	1,893,330	2,188,405	2,421,341	12,275,729
Total first six months 1929	1,453,437	1,537,677	2,031,412	2,199,207	2,412,599	2,424,277	12,038,599
Total first six months 1928	825,036	789,190	859,945	807,553	804,627	774,570	4,840,921

A JOB FOR EACH HOSE AND A HOSE FOR EACH JOB


IT'S FOR A JOB OF SHALLOW DRILLING
350
325
300
THAT FELLOW ON THE LEFT HAS JUST THE QUALIFICATIONS YOU NEED
YOU LOOK LIKE A HUSKY FELLOW ~ IF YOU CAN WORK UP TO 2000 POUNDS, YOU'RE HIRED
JUST WATCH ME IN ACTION, BOSS
HE LOOKS LIKE A WILLING WORKER
FOR PRESSURE UP TO 3500 POUNDS YOU'LL NEVER FIND HIS EQUAL
THERMOID
HE'S BUILT FOR THAT VERY JOB
CAN HE WORK UNDER PRESSURE OF 5000 POUNDS ?



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in flowing a little, but when put on the pump made 175 bbls. in 24 hours. It is the discovery well of a new pool about 1 mile west of the town of Cedar Creek. The pool is as yet unnamed and but for the fact the Yoast Pool, 2 miles south of it, is frequently called the Cedar Creek Field it would probably be called Cedar Creek.

No. 2 Reyes is 1,500 feet from the northwest line of the tract, which is also the northwest line of the Addison Litton League and is 150 feet from the southwest line of the tract and 3,500 feet from the southwest line of the Addison Litton League. It topped the Serpentine at 1,695 feet and drilled to 1,707 feet, stopping in Serpentine. The location for the test was made after using the magnetometer over the district.

The discovery well was completed June 16 and one test has started rigging up since. This new pool is approximately 7½ miles northwest of the Humble's Hilbig Pool.

The Riddle Pool, another Serpentine pool in Bastrop located near the southern line of the county, was discovered late in 1932, but the discovery well was a small affair drilled by Ogden & Reed. Marts & Beavens drilled their No. 1 Riddle, the location for which was made after the magnetometer was used over the district, and it topped the Serpentine at 2,190 feet and stopped at 2,303 feet and came in for a 250-bbl. well completed March 28, and their No. 2 Riddle, completed June 2 at 2,149 feet, came in flowing 72 bbls. an hour the first three hours. The two wells give the field a newer importance and amount to a rediscovery of the pool.

Bexar County

Milo Trussell and others completed the No. 1 Pruitt, 450 feet from the west line and 1,500 feet from the south line of the Pruitt tract in Samuel McCullough Survey, 3 miles north and slightly west of the town of Somerset in southwestern part of Bexar County for a 15-bbl. well at total depth of 905 feet. It was completed in January and some further drilling has been done but thus far without much success in adding production.

Caldwell County

F. L. Thomson drilled the No. 1 Mrs. Lawler, 150 feet from the north and west lines of the tract in the James Berry Survey, at 2,045 feet in a crevice in the chalk and on the pump it started off at 55 bbls. a day. It is a little southeast of the northeast end of the Luling Field and was completed May 9, 1933.

Duval County

Smith & Capps' No. 1 Peters, located 330 feet from the north line and 340 feet from the east line of the NE of the SE of Survey No. 178 in Duval County, in sand at 2,438-52 feet with 6⅝-inch casing set at 2,420 feet was completed January 16 for 20,000,000 feet of gas.

The field has been further developed by the drilling of the No. 2 Peters, 990 feet from the west line and 330 feet from the north line of the NW of the SW of Survey No. 176, which is the next 640-acre survey east of No. 178, and it had sands at 1,813 feet and 2,495-2,522 feet, where it tested 450 pounds; at 2,682-2,707 feet, where it tested 700 pounds and set casing but was unable to shut out water and plugged back to 2,530 feet and was completed as a gas well with 850 pounds.

Since then the Brooklyn Oil Co. drilled the No. 1 Sutherland, a 30,000,000-foot gas well, in sand at 2,447-53 feet, located 2,100 feet from the west line and 1,928 feet from the south line of Survey No. 187, about 2 miles northeast of the two gas wells and it came in a gas well spraying oil. Windsor Oil Co. drilled its No. 1 Peters a mile west of the two gas wells and on drill stem test had a big gas well at 2,226-34 feet but had not completed the well as the half year closed.

Sun Oil Co. drilled the No. 1 Duval County Ranch Co., 1,650 feet from the north and west lines of Survey No. 78, 2½ miles north and a little east of the North Government Wells Pool, total depth 2,676 feet, and plugged back to 2,167 feet it made a 7-bbl. a day pumper but was later abandoned and no additional tests have been drilled near it. Sun's test was drilled in the closing days of last December.

De Soto Oil Co. June 22, this year, drilled the No. 1 Wood-Welder in Survey 211, 1,980 feet from the west line and 950 feet from the north line of the survey and about 1 mile east of the Sun well, total depth 2,500 feet, plugged back to 2,168 feet it came in for 20,000,000 feet of dry gas.

One mile south and two and a half west of the Sun test the Magnolia Petroleum Co. drilled No. 1 Duval County Ranch Co., 330 feet from the south and east lines of the northeast quarter of Survey No. 360 and in sand at 2,259-64 feet it swabbed 65 bbls. in 18 hours or at the rate of about 85 bbls. daily. It was swabbed in June 26 and was not yet standardized as the first half of the year closed. It is producing in the Government Wells sand and at about the same depth as the producers in the north end of the North Government Wells sand and looks more like the opening of a new pool than anything found in that part of the county for some time.

The forerunner of this prospective new pool was William B. Stewart's No. 2 Duval County Ranch Co., 330 feet from the north line and 990 feet from the east line of the S half of the SW of Survey No. 362, the next survey east of that the Magnolia well is on and located about 2,500 feet southeast of the Magnolia. It was completed in the Cole sand topped at 1,557 feet and came in for 10,000,000 feet of gas and a slight show of oil.

Jim Wells County

Magnolia Petroleum Co.'s No. 2 A. A. Seeligson, 3,000 feet from the east line and 150 feet from the south line of the V. Canales Survey No. 218, 4 miles northwest of Premont in southern Jim Wells County, in sand at 3,247-51 feet was completed for an initial production of 100 bbls. daily, completion being early in April. Magnolia has recently started laying line from the well to the Southern Pacific railroad, 2½ miles east, but has not as yet started any additional tests. This prospective new field is some 20 miles from nearest production.

McMullen County

Jacob, Buzzini and Pickett (Loma Oil Co.), who discovered the Jacob Pool last year in northeastern McMullen County, producing at slightly less than 1,000 feet, brought in the No. 1 J. W. Griffith, 150 feet north of the road and on the McMullen-Live Oak County line in the T. Sparks Survey at 927 feet in sand from 915 feet and located 3 miles northeast of the Jacob Pool. The well completed drilling May 31 and was being put on the pump and estimated as good for around 100 bbls., probably opening another shallow pool similar to the Jacob Pool.

Starr County

Sun Oil Co. in the closing days of June brought in the No. 1-A Guerra, 1,140 feet from the southwest line and 6,985 feet from the southeast line of the Guerra 1,360-acre tract and the same distances from the same lines of the Las Cuevitas grant and in the northwestern part of Starr County, in sand at 2,207-32 feet, making an estimated 17,000,000 feet of gas and gauging through separator 15 bbls. of 37 gravity oil an hour.

It is presumably producing from the Government Wells sand but is 25 miles south of any production in the Laredo district at a similar depth.

Webb County

In the closing days of last December Turnbull and others drilled the No. 1 Duval County Ranch Co., 919 feet from the north line and 1,689 feet from the east line of Block 22 of Share 3 of Zapata County School land, opening the Moca Field. The interests that drilled the well later organized as the Moca Oil Co. At 885-909 feet it came in a 100-bbl. well.

This field has not developed much since due to lack of outlet for the oil, but a pipe line was completed in June. Since the bringing in of the discovery well four other oil wells and a gas well have been completed in the same sand.

Decline in Oil and Gas Completions in First Half Year in Old Central West

By GEORGE A. WHITNEY
Staff Correspondent, Central West Fields

The Central West Field showed a heavy decrease in completed wells in the first half of 1933, the record showing 97 fewer completions, 1,304 bbls. less initial production, 46 fewer dry holes, 33 fewer gas wells, than in the same period last year. This covers four divisions of the Central West, Lima, Central Ohio, Indiana and Illinois Fields.

The best oil completion in the Lima Field was drilled by Keiner and others in a test on the Louis Brandt farm in Wyandot County, with an initial of 300 bbls. The oil was found in the Trenton lime in May. In June a 150-bbl. producer was found in the same county.

Indiana developed quite a heavy volume of gas during the half year in review in Gibson and Pike Counties. In January a 9,000,000-foot gas well was drilled on the Sampley farm in Gibson County at 1,449 feet, and in June the Knox Engineering Corp.'s No. 2 Sampley farm, same county, was reported with a volume of 15,000,000 feet.

Following is the tabulated record of field operations in the Lima, Central Ohio, Indiana and Illinois Fields during the first half of 1933:

CENTRAL WEST
Field Operations for the First Half of 1933

Field—	Comp.	Prod.	Dry	Gas	Abd.
Lima	40	768	6	14	87
Central Ohio	127	544	31	73	9
Indiana	73	368	26	25	7
Illinois	8	15	5	1	9
First half 1933	248	1,695	68	113	103
First half 1932	345	2,999	114	146	327
Difference	97	1,304	46	33	224

CENTRAL OHIO FIELD
Summary of Wells Completed First Half of 1933

Month—	Comp.	Prod.	Dry	Gas
January	25	16	4	18
February	19	103	2	13
March	26	317	10	8
April	17	50	3	12
May	14	30	4	8
June	26	28	8	15
First half 1933	127	544	31	73
First half 1932	158	868	63	95
Difference	71	324	32	22

Summary by Counties

County—	Comp.	Prod.	Dry	Gas
Ashland	3	6	2	0
Lorain	6	0	1	5
Wayne	1	6	0	1
Medina	9	49	3	1
Knox	2	0	1	1
Fairfield	7	10	1	4
Coshocton	7	281	1	0
Summitt	2	0	0	2
Licking	9	110	1	4
Muskingum	6	33	1	4
Tuscarawas	2	2	1	0
Athens	4	3	1	1
Holmes	1	39	0	0
Stark	42	0	5	37
Belmont	15	39	5	9
Guernsey	8	0	4	4
Trumbull	1	0	1	0
Carroll	1	0	1	0
Cuyahoga	1	0	1	0
Richland	1	0	1	0
First half 1933	127	544	31	73

LIMA FIELD
Summary of Wells Completed in First Half of 1933

Month—	Comp.	Prod.	Dry	Gas	Abd.
January	7	18	3	2	11
February	6	11	0	3	21
March	5	0	3	2	26
April	7	89	0	3	10
May	6	453	0	1	6
June	9	197	0	4	13
First half 1933	40	768	6	15	87
First half 1932	56	619	11	24	134
Difference	16	149	5	9	97

Summary by Counties

County—	Comp.	Prod.	Dry	Gas	Abd.
Wood	0	0	0	0	26
Hancock	3	40	1	0	3
Allen	3	9	0	0	12
Auglaize	2	5	1	0	4
Sandusky	1	0	1	0	31
Mercer	3	27	0	0	2
Seneca	12	4	1	9	3
Ottawa	0	0	0	0	1
Lucas	3	3	1	0	0
Logan	3	0	0	2	8
Wyandot	13	680	1	4	0
First half 1933	40	768	6	15	87

INDIANA FIELDS
Summary of Wells Completed in First Half of 1933

Month—	Comp.	Prod.	Dry	Gas	Abd.
January	17	100	11	5	0
February	16	55	6	4	0
March	14	85	3	6	0
April	4	25	2	0	0
May	7	38	0	5	3
June	15	65	4	5	4
First half 1933	73	368	26	25	7
First half 1932	75	1,462	34	33	8
Difference	2	1,094	8	3	1

Completions by Counties

County—	Comp.	Prod.	Dry	Gas	Abd.
Gibson	4	0	0	4	2
Pike	13	0	4	9	1
Sullivan	4	0	4	1	4
Daviess	3	5	1	1	0
Vigo	1	0	1	1	0
Perry	7	15	4	0	0
Spencer	4	20	1	0	0
Knox	2	0	1	1	0
Hancock	3	5	0	2	0
Harrison	4	0	0	4	9
Vanderburg	19	313	6	0	0
Orange	1	0	1	0	0
Henry	1	0	0	1	0
Allen	1	0	0	1	0
Martin	2	10	1	0	0
Monroe	2	0	1	1	0
Tippecanoe	2	0	1	1	0
First half 1933	73	368	26	25	8

ILLINOIS FIELDS
Summary of Wells Completed in First Half of 1933

Month—	Comp.	Prod.	Dry	Gas	Abd.
January	1	5	0	0	6
February	3	0	2	1	2
March	1	0	1	0	0
April	1	0	1	0	1
May	0	0	0	0	0
June	2	10	1	0	0
First half 1933	8	15	5	1	9
First half 1932	18	50	10	2	131
Difference	10	35	5	1	122

Summary by Counties

County—	Comp.	Prod.	Dry	Gas	Abd.
Marion	1	5	0	0	6
Crawford	3	0	2	1	0
Lawrence	2	10	1	0	8
Wabash	1	0	1	0	1
Bond	1	0	1	0	0
First half 1933	8	15	5	1	9

SOUTHWEST TEXAS
Completions by Counties for First Six Months of 1933

	Comp.	Prod.	Dry	Gas
Austin	2	0	2	0
Aransas	1	0	1	0
Atascosa	2	0	2	0
Bandera	2	0	2	0
Bastrop	39	10,700	19	0
Bee	17	285	11	2
Bexar	33	158	19	0
Blanco	3	0	3	0
Brooks	1	0	1	0
Comal	1	0	1	0
Caldwell	11	82	8	0
Dimmitt	3	0	3	0
Duval	139	44,610	36	12
Frio	2	0	2	0
Gonzales	2	0	2	0
Goliad	2	0	2	0
Guadalupe	17	0	17	0
Hidalgo	2	0	2	0
Jim Hogg	6	0	6	0
Jim Wells	3	100	2	0
Karnes	5	192	4	0
Kendall	1	0	1	0
Live Oak	13	20	12	0
Maverick	3	0	3	0
McMullen	18	50	17	0
Medina	5	0	5	0
Milam	5	0	5	0
Nueces	27	2,965	13	3
San Patricio	2	0	0	2
Starr	55	178	44	2
Travis	7	0	7	0
Uvalde	1	0	1	0
Williamson	3	0	3	0
Webb	57	7,974	20	4
Zapata	28	615	14	3
Total	498	67,930	300	28
First 6 mos. 1932	369	53,045	189	24
Difference	129	24,885	121	4

Completions by Months

	Comp.	Prod.	Dry	Gas
January	80	31,639	38	3
February	115	12,949	69	9
March	85	10,591	53	7
April	86	6,837	49	3
May	53	2,991	36	3
June	74	11,923	55	3
Total	498	67,930	300	28

North Central, West Texas and Panhandle Fields Held Back By the East Texas Flood of Oil

By L. E. BREDBERG
Fort Worth Bureau, The Oil and Gas Journal

Low prices and lack of demand for West Texas Oil had its effect on drilling activities in that district during the first six months of the year. Wildcatting was curtailed to a new low, and field drilling was held to a minimum. Ward County led in the amount of completed producers during the year, a few wildcats and semiwildcats being completed as dry in that county. There were 52 wells completed in the county, the majority of them in the scattered areas of the southern part while several were also brought in in the O'Brien area near the Winkler County line. Seven tests were abandoned in the county.

The larger activity in Ward County was due to cheap drilling in the southern part of the county; major companies subleasing to independents for drilling on an interest basis, and pipe line companies and refineries taking a larger part of the oil produced than from other pools in the district. Activities are expected to continue in that part of the county.

The Cowden area of northern Ector County had two small producers drilled in during the past six months, and the Addis area has had three. Two tests are slated to start immediately in the Addis and Cowden areas. Costly drilling and small wells may have their effect on retarding drilling in these districts during the year, but increases in crude oil prices may offset these stagnating influences.

Ordovician Tests Continue

One wildcat Ordovician test was abandoned in the district and three others were started. The Stanolind Oil & Gas Co. plugged its No. 1 Todd, in Section 67, Block UV, G.C.&S.F. Survey, after drilling to a total depth of 8,040 feet, plugging back and treating with acid with no successful results. It encountered a good saturated lime streak at 7,357 feet, which was tested, but failed to produce. Two shallow oil producers were drilled on this unitized block, and an offset block of the Continental Oil Co., validating the leases held by the various companies. One gasser was drilled in the shallow area, and four other tests proved dry.

The Humble Oil & Refining Co. is drilling an Ordovician test 9 miles west of the Yates Field, Pecos County, in Section 44, Block Z, T.C. Survey. It will go to 7,000 feet unless oil and gas is found in commercial quantities above that depth.

The Gulf Production Co. is also drilling an Ordovician test in its McElroy Pool. Location is in Section 197, Block F, on the Crane-Upton County line. These two tests will be closely watched until they are completed.

Atkins Brothers and others started an Ordovician test on the Reed ranch in the Mason and Perry Subdivision No. 39, near the town of Carlsbad, Tom Green County.

Another test is being drilled in western Crane County. Loffland Brothers are drilling it on acreage donated by the Gulf Production Co. Location is in Section 9, Block 27, Public School lands, in the Tubbs area where a discovery well came in three years ago, producing below the water level. Two dry holes were drilled in which is considered as worthy of but little attention.

Big Lake's Output

Around 19,000,000 bbls. of high gravity oil has been taken out of the Ordovician lime producing wells in the Big Lake Field, but the majority of these wells are now showing a large volume of water, while six wells are standing dead and will probably not be brought back as commercial producers although the companies owning them are plugging back in an effort to shut off the water and increase the production. It looks as if the areas had been almost drained as far as deep production is concerned. Such an average per well yield, however, is exceptionally high.

Another deep test abandoned in the West Texas district was Cranfill & Reynolds' No. 1 George, in Section 200, Block 1, B.B.B.&C. Survey, in northeastern Fisher County. It was drilled to

North Texas

Daily Average and Monthly Production First Six Months of 1933

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
WICHITA COUNTY:							
Burkburnett—							
Daily average	3,118	2,914	2,877	3,013	2,825	2,806	
Month	96,658	81,592	89,187	90,390	87,575	84,180	529,582
Electra—							
Daily average	7,864	7,813	7,721	7,699	7,501	7,482	
Month	243,784	218,764	239,351	230,970	232,531	224,460	1,389,860
Iowa Park, K.M.A.—							
Daily average	2,549	2,593	2,562	2,583	2,442	2,393	
Month	79,019	72,604	79,422	77,490	75,702	71,790	456,027
Sunshine Hill—							
Daily average	522	516	505	503	497	483	
Month	16,182	14,448	15,655	15,090	15,407	14,490	91,272
Wichita County Miscellaneous—							
Daily average	2,472	2,584	2,572	2,566	2,492	2,416	
Month	76,632	72,352	79,732	76,980	77,252	72,480	455,428
ARCHER COUNTY:							
Daily average	11,203	11,294	11,273	11,519	11,371	10,644	
Month	347,293	316,232	349,463	345,570	352,501	319,320	2,030,379
CLAY COUNTY:							
Daily average	462	521	507	489	495	477	
Month	14,322	14,588	15,717	14,670	15,345	14,310	88,952
WILBARGER COUNTY:							
Daily average	7,987	8,039	7,994	8,203	7,689	6,890	
Month	247,597	225,092	247,814	246,090	238,359	206,700	1,411,652
MONTAGUE COUNTY:							
Daily average	3,977	3,986	3,999	4,181	4,179	3,916	
Month	123,287	111,608	123,969	125,430	129,270	117,480	731,044
YOUNG COUNTY:							
Daily average	8,482	8,595	8,518	8,507	7,574	7,410	
Month	262,942	240,660	264,058	255,210	234,794	222,300	1,479,964
BAYLOR COUNTY:							
Daily average	390	382	372	352	340	341	
Month	12,090	10,696	11,532	10,560	10,540	10,230	65,648
COOKE COUNTY:							
Daily average	1,522	1,563	1,550	1,597	1,572	1,483	
Month	47,182	43,764	48,050	47,910	48,732	44,490	280,128
FOARD COUNTY:							
Daily average	55	65	70	66	65	62	
Month	1,705	1,820	2,170	1,980	2,015	1,860	11,550
Daily average	50,602	50,865	50,526	51,278	49,032	46,302	49,542
Total first six months 1933	1,568,693	1,424,220	1,566,130	1,538,340	1,520,022	1,404,090	9,021,486
Total first six months 1932	1,587,262	1,557,764	1,624,803	1,573,380	1,654,625	1,620,540	9,618,374
Total first six months 1931	1,997,361	1,680,504	1,876,306	1,796,400	1,809,873	1,771,680	10,926,124
Total first six months 1930	2,766,393	2,583,792	2,880,527	3,053,550	3,153,351	3,043,020	17,442,723
Total first six months 1929	2,794,619	2,412,788	2,760,705	2,729,250	2,793,386	2,759,550	16,250,198
Total first six months 1928	2,441,002	2,247,790	2,483,100	2,465,970	2,609,559	2,687,207	14,926,628

Central Texas

Daily Average and Monthly Production First Six Months of 1933

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
BROWN COUNTY:							
Daily average	2,510	2,567	2,570	2,454	2,534	2,315	
Month	77,810	71,876	79,670	73,620	78,554	69,450	450,980
CALLAHAN COUNTY:							
Daily average	3,154	3,164	3,112	3,062	3,065	1,937	
Month	66,774	60,592	65,472	61,860	63,915	58,110	373,723
COLEMAN COUNTY:							
Daily average	2,207	2,231	2,153	1,997	1,779	1,742	
Month	68,417	62,468	66,898	59,910	55,149	52,260	365,102
COMANCHE COUNTY:							
Daily average	985	967	900	875	898	864	
Month	30,535	27,076	27,900	26,250	27,835	25,920	165,519
EASTLAND COUNTY:							
Daily average	2,643	2,636	2,599	2,550	2,307	2,276	
Month	81,933	73,808	80,569	76,500	71,517	68,280	452,907
JACK COUNTY:							
Daily average	1,399	1,378	1,343	1,372	1,312	1,284	
Month	43,369	38,584	41,633	41,160	40,672	38,520	243,938
JONES COUNTY:							
Daily average	1,423	1,482	1,550	1,517	1,580	1,494	
Month	44,113	41,496	48,050	45,510	48,980	44,820	272,969
PALO PINTO COUNTY:							
Daily average	409	441	435	400	362	354	
Month	12,679	12,348	13,485	12,000	11,222	10,620	72,354
RUNNELS COUNTY:							
Daily average	63	55	40	37	49	41	
Month	1,953	1,540	1,240	1,110	1,519	1,230	8,592
SHACKELFORD COUNTY:							
Daily average	3,394	3,425	3,364	3,265	3,177	2,816	
Month	105,214	95,900	104,284	97,950	98,487	84,480	586,315
STEPHENS COUNTY:							
Daily average	4,345	4,531	4,806	5,018	5,218	4,610	
Month	134,695	126,868	148,986	150,540	161,758	138,300	861,147
THROCKMORTON COUNTY:							
Daily average	506	546	550	532	540	529	
Month	15,686	15,288	17,050	15,990	16,740	15,870	96,624
HASKELL COUNTY:							
Daily average	33	31	31	29	30	27	
Month	1,023	868	961	750	930	810	5,342
TAYLOR COUNTY:							
Daily average	118	91	80	51	69	56	
Month	3,658	2,548	2,480	1,530	2,139	1,680	14,035
Daily average	22,189	22,545	22,528	22,166	21,820	20,345	21,931
Total first six months 1933	687,859	631,260	698,678	664,980	676,420	610,350	3,969,547
Total first six months 1932	644,118	626,458	666,128	647,130	680,481	661,440	3,925,755
Total first six months 1931	652,356	628,516	669,600	693,960	741,768	716,370	4,102,570
Total first six months 1930	1,336,689	1,197,784	1,253,702	1,220,510	1,216,176	1,172,640	7,399,501
Total first six months 1929	1,574,423	1,368,304	1,515,249	1,451,880	1,539,057	1,471,350	8,920,263
Total first six months 1928	1,402,754	1,381,096	1,465,029	1,422,150	1,477,119	1,473,111	8,621,259

25 CANDLES ON THE CAKE FOR *Toncan* IRON

No matter where you go you will find someone who thinks that Toncan Iron is something new—an infant among industrial products. As a matter of fact, it is a rather lusty infant—twenty-five years old this year, and still growing.

As it was introduced twenty-five years ago, it was a commercially pure iron with rust-accelerating impurities reduced to lowest practicable limits. Later copper was alloyed with the iron to make it more resistant to attack. Then molybdenum became an important part of the analysis when all tests proved that the addition of this element produced a true alloy with a degree of resistance to rust never before attained with ferrous metals, except in the stainless alloys.

Such is the Toncan Iron of today that is used in making Toncan Iron Pipe. Of such material is the pipe that is writing new records for longer life in service in factories, chemical plants, aboard ship, in power plants, on railroad cars and locomotives, in oil wells and refineries, in coal mines—wherever corrosion or vibration quickly saps the life from other pipe that may cost a trifle less to buy but that in the end proves far more expensive.

There's a new edition of "Pipe for Permanence" coming off the press in a few days. Send your request for a copy and it will be mailed to you just as soon as it is available.

TONCAN COPPER MOLYBDENUM IRON PIPE

REPUBLIC STEEL CORPORATION
GENERAL OFFICES YOUNGSTOWN, OHIO

6,494 feet, plugged back and given a shot at 5,840-6,060 feet, but with no success.

There were three small refineries erected in the district during the past six months; one near the Runnels County Pool, another at Trent in Taylor County, and one at El Paso. The first will operate on crude from the small pool north of Ballinger in Runnels County; the second will operate on crude from the Noodle Creek Pool in Jones County, and the third on Ward County crude.

catting is concerned but the field can produce sufficient oil to keep the entire industry in a turmoil unless regulated.

RANGER AND WICHITA FALLS

The Ranger district has been practically dormant during the past six months, but little pool and wildcat drilling taking place.

Many small areas were opened in the Wichita Falls district, and many extensions made, the majority of them from the shallow producing horizons which produce prolifically in that district. None of the pools or extensions have been of importance, only matching nearby pools in size and production, or proving smaller.

Several hundred wells have been treated with acid in the lime areas of the two districts, the treatment proving successful in the greater number of cases.

One of the deepest tests drilled in this district during the year was Texas Co.'s No. 1 E. L. Burns, in the northwest half of T.E.&L. Survey No. 1,986, east central Young County. It is located in the center of a 1,500-acre block, 2 miles southeast of the nearest Strawn and Bend producing area, in the Knox Pool. The well flowed 127 bbls. the first 24 hours after a 180-quart shot from 4,102-40 feet. It was drilled to a total depth

(Continued on Page 83)

NORTH CENTRAL TEXAS
Summary of Field Operations First Six Months of 1933
Completions by Months

Month—	Comp.	Prod.	Abd.	Gas
January	96	1,177	53	5
February	76	959	54	2
March	78	572	54	5
April	91	4,354	61	2
May	78	786	52	4
June	44	2,533	25	0
Total	465	10,381	299	19

Completions by Counties

County—	Comp.	Prod.	Abd.	Gas
Archer	102	3,807	59	0
Baylor	2	0	2	0
Brown	15	56	9	0
Callahan	29	12	22	5
Clay	15	113	11	0
Coleman	10	142	5	0
Cooke	5	0	5	0
Denton	2	0	2	0
Eastland	12	255	6	1
Erath	1	0	0	1
Grayson	3	0	3	0
Jack	28	159	22	1
Montague	2	0	2	0
Palo Pinto	22	70	12	6
Parker	1	0	1	0
Shackelford	45	586	24	2
Stephens	5	0	3	2
Throckmorton	7	0	6	1
Taylor	1	0	1	0
Wichita	34	553	20	0
Wilbarger	10	30	8	0
Young	114	4,597	76	0
Total	465	10,381	299	19
First 6 mos. 1932	518	15,206	284	27
Difference	53	4,825	15	8

WEST TEXAS
Summary of Field Operations First Six Months of 1933
Completions by Months

Month—	Comp.	Prod.	Abd.	Gas
January	24	6,123	1	0
February	24	5,948	6	0
March	18	1,116	5	0
April	34	6,891	9	0
May	11	748	3	0
June	16	3,217	5	0
Total	127	24,083	29	0

Completions by Counties

County—	Comp.	Prod.	Abd.	Gas
Crane	1	922	0	0
Crockett	6	260	5	0
Comanche	1	0	1	0
Concho	2	0	2	0
Culberson	1	0	1	0
Ector	4	324	1	0
Fisher	2	750	1	0
Garza	2	19	0	0
Glasscock	9	4,041	1	0
Howard	14	1,377	2	0
Jones	2	539	0	0
Loving	4	530	1	0
Pecos	6	249	1	0
Reagan	6	4,878	2	0
Reeves	1	0	1	0
Scurry	1	0	1	0
Upton	4	719	0	0
Ward	53	8,397	7	0
Winkler	9	1,178	2	0
Total	127	24,083	29	0
First 6 mos. 1932	90	9,343	34	2
Difference	37	14,740	5	2

TEXAS PANHANDLE
Summary of Field Operations First Six Months of 1933
Completions by Months

Month—	Comp.	Prod.	Abd.	Gas
January	15	2,070	2	2
February	12	1,939	3	1
March	14	2,949	1	2
April	19	2,527	2	2
May	17	1,907	1	5
June	10	4,914	0	2
Total	87	15,406	9	14

Completions by Counties

County—	Comp.	Prod.	Abd.	Gas
Carson	13	1,370	1	6
Cottle	1	0	1	0
Collingsworth	2	0	2	0
Gray	52	12,134	4	4
Hutchinson	13	1,692	1	1
Moore	1	0	0	1
Wheeler	5	160	0	2
Total	87	15,406	9	14
First 6 mos. 1932	65	13,869	6	16
Difference	22	1,537	3	2

The West Texas district can expect to remain only semiattractive until the East Texas Field shows greater decline, and until companies have given the Gulf Coast a big lease and drilling "play." East Texas is not overly active as far as wild-

Texas Panhandle

Daily Average and Monthly Production First Six Months of 1933

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
CARSON COUNTY:							
Daily average	4,887	4,546	4,806	4,054	4,055	4,063	
Month	151,497	127,288	148,986	121,620	125,798	121,890	797,079
HUTCHINSON COUNTY:							
Daily average	10,687	10,914	11,158	11,234	10,373	10,116	
Month	331,297	305,592	345,898	337,020	321,563	303,480	1,944,850
WHEELER COUNTY:							
Daily average	307	244	314	375	318	297	
Month	9,517	6,832	9,734	11,250	9,858	8,910	56,101
GRAY COUNTY:							
Daily average	27,549	26,962	31,561	29,975	29,063	27,989	
Month	854,019	754,936	978,391	899,250	900,953	839,670	5,227,219
MOORE COUNTY:							
Daily average	906	1,165	1,041	877	872	835	
Month	28,086	32,620	32,271	26,310	27,033	25,050	171,369
Daily average	44,336	43,831	48,880	46,515	44,684	43,300	45,285
Total first six months 1933	1,374,416	1,227,268	1,515,280	1,395,450	1,385,204	1,299,000	8,196,618
Total first six months 1932	1,537,104	1,392,464	1,461,526	1,623,850	1,605,297	1,603,740	9,124,081
Total first six months 1931	1,754,042	1,499,726	1,593,152	1,622,220	1,858,202	1,764,960	10,092,312
Total first six months 1930	2,656,398	2,467,080	2,750,971	2,835,960	3,297,215	3,156,941	17,163,665
Total first six months 1929	1,852,878	1,852,196	1,846,213	1,834,980	2,086,579	2,623,680	11,855,526
Total first six months 1928	2,408,359	2,287,607	2,253,173	2,044,020	2,115,409	1,965,484	13,074,052

West Texas

Daily Average and Monthly Production First Six Months of 1933

Field and County—	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
CHURCH-FIELDS, CRANE:							
Daily average	5,005	4,928	4,932	4,929	4,967	4,862	
Month	155,155	138,264	152,892	148,170	153,977	145,860	894,319
McELROY, CRANE:							
Daily average	8,810	8,962	8,955	8,972	9,006	9,017	
Month	273,110	250,936	277,605	269,160	279,186	270,510	1,620,507
SAND HILLS, CRANE:							
Daily average	28	26	28	30	29	25	
Month	868	728	868	900	899	750	5,013
TODD, CROCKETT:							
Daily average	35	81	60	41	27	22	
Month	1,085	2,268	1,860	1,230	837	660	7,940
WORLD, CROCKETT:							
Daily average	1,018	1,012	982	916	894	911	
Month	31,558	28,336	30,442	27,480	27,714	27,330	172,860
COWDEN, ECTOR:							
Daily average	27	45	69	64	31	25	
Month	837	1,260	2,139	1,920	961	750	7,867
PENN, ECTOR:							
Dail yaverage	4,002	3,971	3,973	3,981	3,968	3,992	
Month	124,093	111,188	123,163	119,430	123,008	119,760	720,642
ODESSA, ECTOR:							
Daily average	252	375	311	272	210	216	
Month	7,812	10,500	9,641	8,160	6,510	64,80	49,103
FISHER, FISHER:							
Daily average	639	1,575	3,247	3,161	2,875	2,623	
Month	19,809	44,100	100,657	94,830	89,125	78,690	427,211
BOREN, GARZA:							
Daily average	.....	.....	30	24	28	24	
Month	.....	.....	930	720	896	720	3,176
CHALK-ROBERTS, HOWARD:							
Daily average	14,011	13,986	15,858	15,809	15,911	16,028	
Month	434,341	391,608	491,598	474,270	493,241	480,840	2,765,898
MERTZON, IRION:							
Daily average	20	30	21	14	12	10	
Month	620	840	651	420	372	300	3,203
WHEAT, LOVING:							
Daily average	3,027	3,194	3,267	3,120	3,073	2,786	
Month	93,837	89,432	101,277	93,600	95,263	83,580	556,989
IATAN, MITCHELL:							
Daily average	1,579	1,541	1,532	1,585	1,507	1,419	
Month	48,949	43,148	47,182	47,550	46,717	42,570	276,116
COURTNEY, PECOS:							
Daily average	30	.....	.....	65	38	39	
Month	930	.....	.....	1,960	930	1,170	4,980
MASTERSON, PECOS:							
Daily average	.....	.....	.....	10	.....	.....	
Month	.....	.....	.....	300	.....	.....	300
PECOS VALLEY, PECOS:							
Daily average	295	280	226	220	195	208	
Month	9,145	7,840	7,316	6,600	6,045	6,240	43,186
TAYLOR-LINK, PECOS:							
Daily average	702	672	612	582	508	520	
Month	21,762	18,816	18,972	17,460	15,748	15,600	108,358
YATES, PECOS:							
Daily average	62,424	62,128	61,949	62,577	62,062	62,067	
Month	1,935,144	1,741,264	1,920,419	1,877,310	1,923,953	1,862,010	11,260,100
BIG LAKE, REAGAN:							
Daily average	19,496	18,600	20,894	19,511	19,540	24,014	
Month	604,376	520,800	647,714	585,330	605,740	720,420	3,684,380
HURDLE, UPTON:							
Daily average	3,979	4,075	4,183	4,279	4,132	3,917	
Month	123,349	114,100	129,673	128,370	128,092	117,510	741,094
GRAND FALLS, WARD:							
Daily average	2,822	3,047	3,115	3,275	3,417	3,031	
Month	87,482	85,316	96,565	98,250	105,927	90,930	564,470
O'BRIEN, WARD:							
Daily average	4,180	4,535	4,464	4,656	4,897	4,755	
Month	129,580	126,980	138,394	139,680	151,807	142,740	829,171
SHIPLEY, WARD:							
Daily average	17	.....	.....	.....	.....	.....	
Month	372	.....	.....	.....	.....	.....	372
HENDRICK, WINKLER:							
Daily average	24,535	24,236	23,324	22,569	21,501	21,223	
Month	760,585	678,608	723,264	677,070	666,531	636,690	4,142,888
NORTH WINKLER, WINKLER:							
Daily average	1,845	1,760	1,819	1,848	1,839	2,061	
Month	57,195	49,280	56,389	55,440	58,559	61,830	338,693
Daily average	153,774	159,129	163,861	162,530	160,708	163,798	161,466
Total first six months 1933	4,921,994	4,455,612	5,079,691	4,874,600	4,981,948	4,913,940	29,228,785
Total first six months 1932	5,784,136	4,991,045	5,533,137	5,551,500	5,624,227	5,338,870	32,807,924
Total first six months 1931	6,817,675	6,813,660	7,291,190	7,062,640	6,404,972	6,300,510	40,690,647
Total first six months 1930	10,608,882	9,574,215	10,412,647	8,436,801	9,661,721	9,130,229	58,824,497
Total first six months 1929	11,380,341	9,966,066	11,609,104	10,599,784	10,990,292	10,987,589	65,532,126
Total first six months 1928	8,821,701	9,036,190	10,380,877	11,149,642	9,873,668	8,947,700	58,209,778
Total first six months 1927	2,126,352	1,857,800	2,331,510	2,752,080	3,514,935	3,338,150	15,918,827

Rocky Mountain Fields Accomplished Little in New Discoveries in the First Half of 1933

By TOLBERT R. INGRAM
Staff Correspondent, Rocky Mountain Area

The Rocky Mountain division, made up of Montana, Wyoming, Colorado, New Mexico and Utah, experienced a very dull half year in 1933, and production fell off materially in most of the fields of the big territory.

The principal developments in New Mexico in the first half of 1933 included the drilling of several flank wells in the Hobbs Pool which revealed the edge of the productive area on the north, extended it slightly on the northwest and added a few units to production on the southeast; the drilling of two wells in the Lea Pool which defined the area on the northwest and extended it slightly on the east; the completion of two good producers in the Jal area and another in the Eunice area, and the location of a new high along the line of production in Eddy County.

The proration agreement between the State of New Mexico and the operators in the Hobbs Pool was renewed last January with no important change except for a provision limiting the minimum output to 30,000 bbls. daily and another giving any party to the agreement the right to withdraw on 30 days' notice. In April a majority of the operators voted in favor of changing the basis of proration from 75 per cent on potential and 25 per cent on acreage to 60 per cent on potential and 40 per cent on acreage. However, all the operators did not sign and the basis for allotting production was not changed. The daily allowable outlet was 21,306 bbls. in January, but following the renewal of the agreement it was increased to 30,334 bbls. and at the end of the six months the allowable was 33,502 bbls. No additional progress on plans to unitize the field was reported.

Marks Production Limits

The Humble Oil & Refining Co.'s No. 1 Hardin, SW cor. NW, Section 18-18-38, marked the limits of production on the north. It was drilled to 4,720 feet The Amerada Petroleum Corp.'s No. 3 Hardin, NW cor. SW, Section 18, a south offset to the Humble well, also drew a blank at a total depth of 4,180 feet, but plugged back and produced from above the pay, making 648 bbls. of oil and 840,000 feet of gas initial.

A group of offsets drilled around the center of the section line between Sections 24 and 25-18-37 by the Texas Co., the Texas Pacific Coal & Oil Co. and the Continental Oil Co. extended the productive area half a mile to the west on the northwest. The most farthest west of these was the Continental Oil Co.'s No. 1-B State-25, NE cor. NW, Section 25-18-37, which was completed at 4,225 feet for 5,216 bbls. open flow and 4,926,000 feet of gas. It topped the brown lime at 2,920 feet and the elevation is 3,668 feet. Slight extensions of from one to two locations east were made on the northeast flanks in wells drilled by the Skelly Oil Co. in its No. 1 State, SW SW, Section 17-18-38, and the Humble Oil & Refining Co.'s No. 3-B Bowers, SW SE SE, Section 20-18-38. The last named made 12,150 bbls. initial and the Skelly well at 4,260 feet made 2,824 bbls. of oil and 17 per cent water. The remainder of the drilling was inside except for several wells in the extreme southeast which came in as small producers and revealed nothing that was not generally expected.

The limit of the Lea Pool on the northwest was found in the Texas Co.'s No. 1-B Lynch, C SW NW, Section 34-20-34, which was plugged and abandoned at 3,808 feet.

The Atlantic Oil Producing Co. proved up about one-fourth of a mile of territory in its No. 1-B State, C NE SE, Section 8-21-36, in the Eunice Pool, a south offset to the Tidal Oil Co.'s No. 1 State, C SW NE, Section 8. The interesting feature of this test was the increased production as compared with its offset. The Tidal well made 524 bbls. initial at a total depth of 3,985 feet and the Atlantic well made 1,008 bbls. at 3,901 feet, total depth. The last named was given acid treatment to open up the lime and responded with about double the output of the other well.

The most important development in the Jal area, where two wells were drilled, was in the Continental Oil Co.'s No. 1-B Sholes-13, C SW NW, Section 13-25-36, which made 2,280 bbls. of oil and 40,000,000 feet of gas first 24 hours at a total depth of 3,370 feet. It shut off more than 100,000,000 feet of gas per day in upper horizons. This is the best oil well drilled in the Jal Pool and gives some indications of the possibilities when conditions warrant development. It was an east offset to a well drilled by the Humble Oil & Refining Co. in 1930 which made 139 bbls. initial.

NEW MEXICO
Summary of Wells Completed First Six Months of 1933

County—	Comp.	Prod.	Dry	Gas
De Baca	1	0	1	0
Dona Ana	1	0	1	0
Eddy	5	98	2	0
Lea	28	121,332	3	0
San Juan	2	35	0	0
Santa Fe	1	0	1	0
Total	38	121,465	8	0
Same period 1932	23	62,810	6	2
Difference	15	58,655	2	2

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	5	36,673	0	0
February	8	39,697	2	0
March	7	21,156	1	0
April	9	9,780	3	0
May	8	14,030	2	0
June	1	129	0	0
Total	38	121,465	8	0

In Eddy County to the east of a group of gas wells in Section 22-17-29, in the Jackson area, and the Grayburg Oil Co.'s No. 2 Keeley, C SE NE, Section 24, Harry Leonard and the Barnsdall Oil Corp. found a new high in their No. 1 Dodd, SW SE SW, Section 22-17-29. Leonard acquired the gas rights and the Barnsdall company was after oil. It had gas at 2,280-93 feet which gauged 6,742,000 feet with a pressure of 750 pounds. It was bradenheaded off and saved and the well was continued to 2,993 feet where it was completed for 24 bbls. of oil. The elevation is 3,539 feet. The top of the salt was at 235 feet, the top of the brown lime at 2,089 feet and the top of the Terry at 2,595 feet.

COLORADO

The most important discovery in Colorado so far this year was made on the Rangely Dome, in the northwestern corner of Rio Blanco County, a few miles east of the Utah boundary, in the California Co.'s No. 1 California-Raven, NW SE, Section 30-2n-102. This well encountered oil last fall, but the value of the discovery was not fully disclosed until this year and its full significance is not yet definitely known. The well has not

Colorado

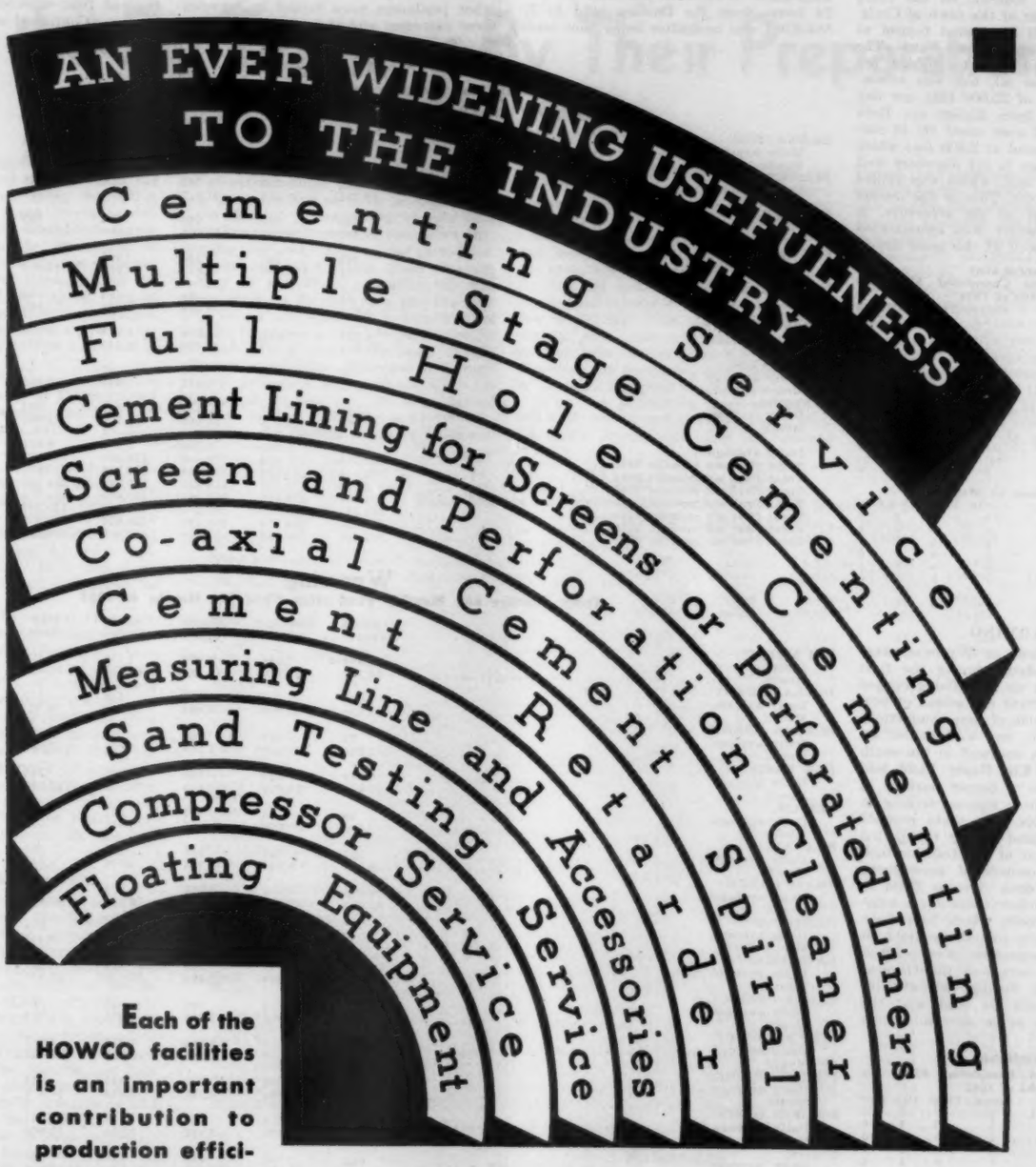
Daily Average and Monthly Production First Six Months of 1933

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
CRAIG:							
Daily average	546	643	664	524	587	556	
Month	16,740	18,004	20,584	15,720	18,197	16,680	105,925
FORT COLLINS-WELLINGTON:							
Daily average	784	587	727	563	664	607	
Month	24,304	16,436	22,537	16,890	20,584	18,210	118,961
FLORENCE:							
Daily average	283	231	260	217	249	229	
Month	8,772	6,468	8,060	6,510	7,719	6,870	44,400
ILES:							
Daily average	538	499	508	482	611	573	
Month	16,678	13,972	15,748	14,460	18,941	17,190	96,989
ORCHARD:							
Daily average	191	199	145	120	142	151	
Month	5,921	5,572	4,495	3,600	4,433	4,530	28,551
RANGELY:							
Daily average	96	51	59	81	79	80	
Month	2,976	1,428	1,829	2,430	2,449	2,400	13,512
TOW CREEK:							
Daily average	259	267	264	222	275	243	
Month	8,029	7,476	8,184	6,660	8,525	7,290	46,164
Daily average	2,691	2,477	2,627	2,209	2,668	2,439	2,511
Total first six months 1933	83,421	69,356	81,437	66,270	80,848	73,170	454,502
Total first six months 1932	107,384	104,052	111,817	101,580	100,440	89,526	614,798
Total first six months 1931	131,471	119,336	132,295	122,910	129,270	122,960	758,242
Total first six months 1930	151,187	146,860	144,274	133,590	137,175	136,950	850,036
Total first six months 1929	215,016	182,280	213,125	197,130	223,727	224,220	1,255,498
Total first six months 1928	234,635	232,625	259,563	203,610	204,383	218,940	1,353,756
Total first six months 1927	.....	.....	.....	.....	.....	.....	1,398,539

New Mexico

Daily Average and Monthly Production First Six Months of 1933

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
HOGBACK:							
Daily average	323	318	221	213	208	211	
Month	10,012	8,820	6,851	6,390	6,448	6,330	44,853
RATTLESNAKE:							
Daily average	484	475	597	677	673	667	
Month	15,004	13,300	18,507	20,310	20,863	20,010	107,994
TABLE MESA:							
Daily average	97	88	81	86	100	79	
Month	3,007	2,464	2,511	2,580	3,100	2,370	16,032
ARTESIA:							
Daily average	469	473	467	647	515	531	
Month	14,539	13,244	14,477	19,410	15,965	15,930	93,565
HOBBS:							
Daily average	25,918	30,277	30,731	28,876	28,645	28,804	
Month	803,453	847,756	952,661	866,280	888,015	864,120	5,222,590
JAL:							
Daily average	1,047	1,061	1,210	1,160	1,195	1,471	
Month	32,457	29,708	37,510	34,800	37,045	44,130	215,650
EUNICE:							
Daily average	506	514	462	491	571	563	
Month	15,686	14,392	14,322	14,730	17,701	16,860	93,691
MALJAMAR-JACKSON:							
Daily average	995	865	849	941	902	903	
Month	30,845	24,220	26,319	28,230	27,962	27,340	164,816
LEA CITY & T. & P.:							
Daily average	2,284	2,390	2,436	2,410	2,420	2,210	
Month	70,804	66,920	75,516	72,300	75,020	66,300	426,860
Daily average	33,123	36,458	37,054	35,591	35,749	35,443	35,384
Total first six months 1933	996,813	1,020,824	1,148,674	1,065,030	1,092,719	1,063,290	6,386,350
Total first six months 1932	1,163,766	1,056,702	1,126,354	1,096,320	1,109,273	1,069,020	6,610,435
Total first six months 1931	1,333,304	1,122,220	2,252,989	1,199,730	1,385,259	1,328,670	7,522,672
Total first six months 1930	315,549	288,532	337,528	374,550	558,583	636,040	2,511,118
Total first six months 1929	87,658	83,384	89,621	98,640	96,751	88,762	544,826
Total first six months 1928	74,865	59,981	69,247	88,180	72,470	58,860	404,603
Total first six months 1927	136,679	138,460	148,738	142,140	112,530	102,120	780,667



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Duncan, Oklahoma

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SERVICE

been completed and the company has not yet released official data on it.

Colorado had a significant oil discovery in Moffat County, but as the well is being drilled for gas, it was cased off without a test. This was in the Rocky Mountain Gas Co.'s No. 1 Eberle, SE SW SE, Section 9-6n-91, on the Craig Dome, 3 miles west of the town of Craig. It encountered oil in a sand topped at 1,278 feet in the upper Mesa Verde. The flow was estimated at 50 to 75 bbls. per day of light green oil, but was accompanied by a flow of 25,000 bbls. per day of warm water from higher up. Both the water and oil were cased off to continue to the gas sand at 2,800 feet which was found last year in the discovery well 1,500 feet to the east, which was drilled by the Ohio Oil Co. This is the second well to be drilled on the structure. A similar flow of water was encountered in the discovery well at the same depth.

COLORADO

Summary of Wells Completed First Six Months of 1933

County—	Comp.	Prod.	Dry	Gas
Archuleta	1	0	1	0
Fremont	3	0	3	0
La Plata	1	0	1	0
Las Animas	1	0	1	0
Larimer	3	0	3	0
Lincoln	1	0	1	0
Rio Blanco	1	0	0	1
Weld	5	0	4	1
Total	16	0	14	2
Same period 1932	18	57	14	2
Difference	2	57	0	0

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	0	0	0	0
February	4	0	3	1
March	9	0	8	1
April	0	0	0	0
May	0	0	0	0
June	3	0	3	0
Total	16	0	14	2

WYOMING

Drilling operations in Wyoming were almost at a standstill during the first half of 1933 with no new fields opened and no new important extensions of producing pools. Outside of four completions in the Osage Pool, one well drilled on the Frannie Dome, one well in the south extension of the Elk Basin Field and one test drilled to a deeper horizon in the Big Muddy, there was no drilling in the producing fields. The State reduced rentals on state land during the period and the Department of the Interior took steps to compel owners of government leases in the Maverick Springs Field in Fremont County, where there are a number of black oil wells which have been shut in for 15 years to put the field on production. A compromise was reached between the operators and the Government on Maverick Springs whereby increased rentals will be paid and the field will continue to be shut in for an indefinite time.

WYOMING

Summary of Wells Completed First Six Months of 1933

County—	Comp.	Prod.	Dry	Gas
Carbon	1	0	1	0
Lincoln	1	0	1	0
Natrona	3	50	1	0
Park	3	346	0	1
Platte	1	0	1	0
Hublet	1	0	1	0
Sweetwater	1	0	0	1
Uinta	2	0	2	0
Weston	4	135	1	0
Total	16	531	8	2
Same period 1932	14	1,546	5	0
Difference	2	1,015	3	2

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	1	100	0	0
February	7	366	6	0
March	0	0	0	0
April	2	0	1	1
May	4	50	1	1
June	2	15	1	0
Total	16	531	8	2

MONTANA

The principal developments in Montana in the first half of 1933 were the opening of a new pool in Glacier County, on the North Cut Bank Dome, 3 miles south of the Canadian boundary, the addition of several miles of productive area to the Cut Bank Field and a half mile extension of the Dry Creek Field in Carbon County.

There were 12 wells completed in the Cut Bank Field during the six months with an average initial production of 90 bbls. each. The most northerly of these was the Santa Rita Oil & Gas Co.'s No. 1 Blackfoot, C SW NE, Section 15-36-6w, in the Blackfeet Indian Reservation and 4 miles north of the nearest producer. Its elevation is 3,874 feet and it was completed at 2,903 feet, 1 foot in the Ellis shale. It swabbed 135 bbls. the first 24 hours from the Darling sand at 2,884-2,901 feet and after being shot made 167 bbls. first 24 hours on the pump and settled to an average of 75 bbls.

The Cut Bank development extends 11 miles from this well towards the southeast to the Montana Power Co.'s No. 1 Simero, C N half, Section 5-33-5w, which was completed late in 1932 at 2,792 feet for an initial production of 102 bbls. The other producers were drilled in between these extremes and the only outstanding well was R. C. Tarrant's No. 1 Miller, C NE NE, Section 24-34n-6w, which came in as a flowing well, the first and only one in the field to date, making 450 bbls. initial from Darling sand at 2,785-2,810 feet. This well changed the complexion of the operation and revealed the possibilities for a much better field than at first expected. The limits of the

(Continued on Page 88)

Montana

Daily Average and Monthly Production First Six Months of 1933

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
BANNATYNE:							
Daily average	32	36	35	35	35	33	
Month	992	1,008	1,085	1,050	1,085	990	6,210
BORDER:							
Daily average	410	777	707	359	345	346	
Month	12,710	21,756	21,917	10,770	10,695	10,380	88,228
CAT CREEK:							
Daily average	749	650	745	716	703	712	
Month	23,219	18,200	23,188	21,480	21,793	21,360	129,240
CUT BANK:							
Daily average	161	285	194	467	452	827	
Month	4,991	7,980	6,014	14,010	14,012	24,810	71,817
DRY CREEK:							
Daily average	35	.....	84	251	345	671	
Month	1,085	.....	2,604	7,530	10,695	20,130	42,044
KEVIN-SUNBURST:							
Daily average	3,081	2,582	2,784	3,177	3,170	3,196	
Month	95,511	72,296	86,304	95,310	98,270	95,880	543,571
LAKE BASIN:							
Daily average	52	61	48	47	48	53	
Month	1,612	1,708	1,488	1,410	1,488	1,590	9,296
PONDERA:							
Daily average	1,386	997	968	925	903	940	
Month	42,966	27,916	30,008	27,750	27,993	28,200	184,833
Daily average	5,906	5,388	5,568	5,977	6,001	6,778	5,941
Total first six months 1933	183,086	150,864	172,608	179,310	186,031	203,340	1,075,239
Total first six months 1932	173,569	166,273	189,224	223,830	233,647	210,060	1,196,703
Total first six months 1931	243,123	249,900	258,285	249,840	254,128	246,450	1,501,846
Total first six months 1930	253,456	233,408	267,561	298,410	304,172	289,350	1,646,357
Total first six months 1929	241,299	257,856	293,973	298,830	350,238	347,610	1,809,606
Total first six months 1928	363,370	339,679	358,112	356,520	338,272	313,260	2,063,213
Total first six months 1927	426,498	399,868	452,600	417,000	434,155	462,230	2,592,451

Wyoming

Daily Average and Monthly Production First Six Months of 1933

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
BIG MUDDY:							
Daily average	1,899	1,848	1,885	1,759	1,833	1,817	
Month	58,869	51,744	58,435	52,770	56,823	54,510	333,151
DALLAS-DERBY:							
Daily average	551	491	228	520	541	536	
Month	17,081	13,748	7,068	15,600	16,771	16,080	86,348
DUTTON CREEK:							
Daily average	73	41	55	69	77	44	
Month	2,263	1,148	1,705	2,070	2,387	1,320	10,893
ELK BASIN:							
Daily average	565	533	598	578	526	562	
Month	17,639	14,924	18,538	17,340	16,585	16,860	101,886
FERRIS:							
Daily average	19	20	17	21	18	457	
Month	589	560	527	630	558	13,710	16,574
FRANNIE:							
Daily average	297	323	283	190	195	236	
Month	9,207	9,044	8,928	5,700	6,045	7,080	46,004
GRASS CREEK:							
Daily average	1,685	1,699	1,771	1,678	736	312	
Month	52,235	47,572	54,901	50,340	22,830	9,360	237,038
HAMILTON:							
Daily average	.....	.....	273	701	854	848	
Month	.....	.....	8,463	21,030	26,474	25,440	81,407
LA BARGE:							
Daily average	1,035	993	938	854	774	1,002	
Month	32,085	27,804	29,078	25,620	23,994	30,060	168,641
LANCE CREEK:							
Daily average	66	70	66	89	64	204	
Month	2,046	1,960	2,046	2,670	1,984	6,120	16,826
LOST SOLDIER:							
Daily average	1,786	1,379	1,364	1,454	1,932	1,873	
Month	55,366	38,612	42,284	43,620	59,892	56,190	295,964
POISON SPIDER:							
Daily average	61	53	206	115	328	190	
Month	1,891	1,484	6,386	3,450	10,478	5,700	29,389
OREGON BASIN:							
Daily average	295	219	101	134	315	235	
Month	9,145	6,132	3,131	4,020	15,965	7,050	45,443
OSAGE:							
Daily average	695	910	870	719	549	686	
Month	21,545	25,480	26,970	21,570	17,019	20,580	133,164
ROCK CREEK:							
Daily average	1,315	1,368	1,415	1,407	811	1,190	
Month	40,765	38,304	43,865	42,210	25,141	35,700	225,985
SALT CREEK:							
Daily average	20,604	19,927	20,399	18,863	15,680	19,116	
Month	638,724	558,236	632,369	565,890	610,460	573,480	3,579,369
BYRON-GARLAND:							
Daily average	128	126	199	232	96	178	
Month	3,968	3,360	6,169	6,960	2,976	5,340	28,773
PILOT BUTTE:							
Daily average	.....	.....	.....	32	32	.....	
Month	.....	.....	.....	960	992	.....	1,952
TEAPOT:							
Daily average	.....	25	19	17	16	21	
Month	.....	700	589	510	496	630	2,925
GREYBULL:							
Daily average	8	9	7	5	6	.....	
Month	248	252	217	150	186	.....	1,053
MIDWAY:							
Daily average	106	108	155	118	113	76	
Month	3,286	3,024	4,805	3,540	3,503	2,280	20,438
BADGER BASIN:							
Daily average	48	46	45	43	44	40	
Month	1,488	1,288	1,395	1,290	1,364	1,200	8,025
HUDSON:							
Daily average	350	364	351	364	388	373	
Month	10,850	10,192	10,881	10,920	12,028	11,190	66,031
Daily average	31,530	30,556	31,250	29,962	30,160	29,986	30,593
Total first six months 1933	979,290	855,561	968,750	898,860	934,960	899,850	5,537,278
Total first six months 1932	1,010,445	1,093,097	1,189,997	1,102,310	1,167,323	1,048,080	6,602,252
Total first six months 1931	1,358,324	1,254,568	1,264,306	1,329,390	1,329,652	1,278,720	7,814,930
Total first six months 1930	1,430,892	1,409,184	1,587,665	1,527,920	1,566,283	1,406,850	8,927,810
Total first six months 1929	1,513,087	1,442,236	1,599,104	1,490,430	1,581,806	1,520,160	9,145,923
Total first six months 1928	1,756,505	1,598,602	1,714,889	1,748,520	1,903,918	1,834,410	10,561,844
Total first six months 1927	1,870,727	1,678,180	1,840,439	1,838,070	1,896,301	1,853,920	10,976,637

Shreveport District Operators Show Confidence in the Big Territory By Their Preparations

By D. H. BANCROFT
Staff Correspondent, Louisiana-Arkansas

For a period of depression, and more especially for a period during which the oil industry has been going through a particularly critical stage, North Louisiana-Arkansas territory has shown up remarkably well from the standpoint of drilling activities. While there were fewer completions and fewer operations on the books at the end of the period than at the end of 1932, there were more completions and only 10 less operations under way than at the end of the first half of last year.

On the other hand, winter months are usually the most active in this territory and the difference between the last half of 1932 and the first half of 1933 is seasonal.

Natural depletion of the active fields accounts for a difference of initial production of new completions, still there were 21 fewer dry holes between the last half of last year and the first half of this, though there were 42 more failures in the first half of 1933 than there were during the corresponding period of last year.

Since the first of the current year operations under way carried on field reports as locations, rigs and drilling wells have shown a small but continued increase from month to month and returning better conditions will probably continue at the same or at an accellerated rate with increasing confidence in the general outlook on conditions as a whole. These figures and this outlook apply to Louisiana north of Red River, south Arkansas, Mississippi wildcat and proven territory and even the border counties of East Texas which have been quiescent for the last year or more.

Active Regions in 1933

While there was continued wildcatting throughout the territory, North Louisiana activities were centered largely in the Zwolle Field of Sabine Parish, and its extensions; the development of the new Converse Field, 15 miles north of Zwolle, and the Blanchard (Caddo Parish) gas field, the Rodessa Trinity gas district of the same parish, and to a lesser extent the Sugar Creek Trinity gas field of Claiborne Parish. The Monroe gas field was, until the last month or six weeks of the period, practically inactive as was the Richland Parish gas field.

In Mississippi, the Jackson gas field was active only to the extent of drilling necessary offsets or wells to protect leases. The field developed 150 bbls. of oil, initial production, of doubtful commercial value and longevity, though two groups are interested in building topping plants at Jackson to handle local and East Texas crude. During the last half of last year 500 bbls. initial was developed. It is a heavy crude of asphalt base and accompanied by much salt water.

Miller County's (Ark.) first producer was completed in 1930 and development continued slowly until the fall of 1932 when the second commercial well was completed. More or less of a local boom developed resulting in completion to date of half a dozen wells, closely grouped, with wildcat failures on all four sides. From 200 to 400 bbls. per day has been shipped out in tank cars, as there are no pipe line facilities, for the last two or three months.

The Converse Area

Converse district of northern Sabine Parish, Louisiana, was opened during the latter part of last year and reached its greatest development at the end of the first half of 1933 with six completions, five producers with a total run ranging from 500 to 600 bbls, one gas well and 10 operations under way. As this is written there are two or three more prospects showing for successful completions. Pipe line connections were completed during the last two weeks of the period but the pool has not yet been given separate rating as the oil is approximately the same grade as Zwolle crude and the pipe line is an extension of a line serving Zwolle. Converse is very similar to Zwolle in that it is a chalk rock field, though there is considerable difference of opinion among geologists and paleontologists on this point. It has not yet been agreed upon as to what formation is producing.

During the closing weeks of 1932 and the first two or three months of 1933 the acid treatment of chalk rock wells was applied generally in Zwolle and to a limited extent in the same formation in Caddo Parish pools and also, but to a still more limited extent, in the Monroe gas area, where a sand condition prevails. At first the results far exceeded expectations, particularly in Zwolle, but after a few weeks the wells settled to approximately, or a little more, than their production before being given the treatment. However, the treatment is still being used with uniformly good results.

With gas production from around 5,500-5,700 feet in northwestern Caddo Parish and at around 4,300 feet in Claiborne Parish, and showings of oil in older deep tests in Caddo, DeSoto, Bossier and Webster proven and wildcat areas, there is a growing tendency toward deeper drilling throughout the territory and in North Louisiana in particular. The deepest hole yet drilled in the territory, in the Smackover Pool of Arkansas, was abandoned below 7,000 feet with the bottom 1,000 feet or more in rock salt. Geologically it was a shallower test than one drilled in Cotton Valley Pool of Webster Parish three years ago and another still drilling on the south flank of the Bellevue Dome of Bossier Parish, Louisiana. From the geological point of view this well, last reported at 5,030 feet, is the deepest ever

North Louisiana

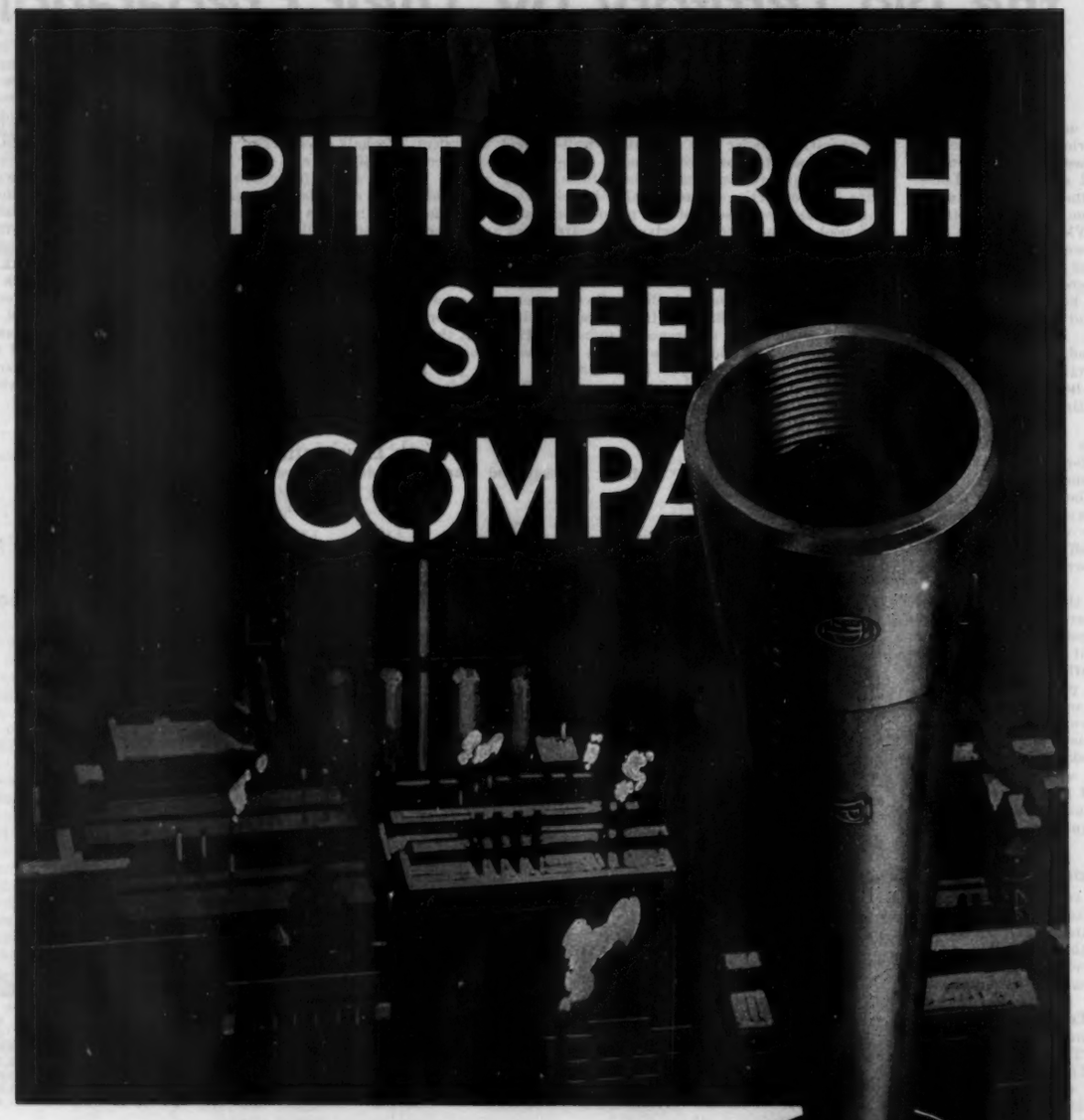
Daily Average and Monthly Production First Six Months of 1933

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
CADDO (light):							
Daily average	4,887	4,965	5,114	5,024	4,977	4,742	
Month	151,497	139,020	158,534	150,730	154,267	142,260	896,318
CADDO (heavy):							
Daily average	1,775	1,730	1,742	1,653	1,562	1,573	
Month	55,025	49,340	54,002	49,590	48,463	47,190	304,100
COTTON VALLEY:							
Daily average	665	636	639	625	566	555	
Month	20,615	17,808	19,499	18,750	17,546	16,650	110,868
DE SOTO-RED RIVER:							
Daily average	1,764	1,727	1,775	1,742	1,653	1,636	
Month	54,684	48,356	55,025	52,260	51,305	49,080	310,710
ELM GROVE:							
Daily average	360	349	343	549	327	351	
Month	11,160	9,772	10,788	16,470	10,137	10,530	68,857
HAYNESVILLE:							
Daily average	3,806	3,922	3,937	3,957	3,933	3,926	
Month	118,046	109,816	121,737	118,710	122,078	117,780	709,967
HOLLY:							
Daily average	226	238	217	215	210	203	
Month	7,006	6,328	6,727	6,450	6,510	6,090	39,111
HOMER:							
Daily average	2,754	2,731	2,724	2,703	2,692	2,694	
Month	85,374	76,468	84,444	81,090	83,452	80,820	491,648
PLEASANT HILL:							
Daily average	238	255	293	284	252	249	
Month	5,938	7,140	9,083	8,520	7,812	7,470	48,584
SAREPTA-CARTERSVILLE:							
Daily average	722	676	704	765	760	739	
Month	22,382	18,928	21,824	22,950	23,560	22,170	133,314
URANIA:							
Daily average	3,309	3,302	2,655	1,470	1,453	1,875	
Month	102,579	92,456	82,305	44,100	45,043	56,250	422,733
ZWOLLE:							
Daily average	9,027	9,556	11,524	11,135	8,860	6,716	
Month	279,837	267,568	357,244	334,050	259,160	201,480	1,699,339
Daily average	29,643	30,125	31,652	30,122	26,754	25,309	28,938
Total first six months 1933	918,928	843,500	981,212	903,660	829,374	759,270	5,235,949
Total first six months 1932	897,295	834,412	866,636	869,580	915,802	895,440	5,269,165
Total first six months 1931	1,274,256	1,329,788	1,247,130	1,170,330	1,219,106	1,086,780	7,327,389
Total first six months 1930	1,163,554	1,138,396	1,271,465	1,258,500	1,236,701	1,200,630	7,269,246
Total first six months 1929	1,114,171	990,024	1,109,988	1,069,200	1,097,121	1,068,960	6,449,462
Total first six months 1928	1,369,146	1,313,555	1,369,115	1,411,890	1,323,084	1,372,040	8,118,780
Total first six months 1927	1,589,122	1,474,904	1,589,711	1,511,250	1,469,710	1,435,020	9,068,817

Arkansas

Daily Average and Monthly Production First Six Months of 1933

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
CHAMPAGNOLLE:							
Daily average	1,527	1,491	1,445	1,363	1,354	1,370	
Month	47,337	41,748	44,795	40,890	41,974	41,100	257,844
EL DORADO:							
Daily average	2,644	2,648	2,640	2,698	2,689	2,605	
Month	81,964	74,144	81,840	80,940	80,379	78,150	477,917
LISBON:							
Daily average	447	443	412	405	401	396	
Month	13,857	12,404	12,772	12,150	12,431	11,880	75,494
MILLER COUNTY:							
Daily average	360	83	135	61	65	62	
Month	11,160	2,464	4,185	1,830	2,015	1,860	23,514
NEVADA COUNTY:							
Daily average	897	980	852	604	454	505	
Month	27,807	27,440	26,412	18,120	14,074	15,150	129,003
SMACKOVER (light):							
Daily average	2,671	2,626	2,593	2,566	2,562	2,612	
Month	82,801	73,528	80,383	76,980	79,422	78,360	471,474
SMACKOVER (heavy):							
Daily average	22,698	22,412	21,638	22,035	21,929	21,852	
Month	703,638	627,536	670,778	662,550	679,799	655,590	3,999,891
STEPHENS:							
Daily average	239	151	141	140	145	207	
Month	7,409	4,228	4,371	4,200	4,538	6,210	31,006
URBANA:							
Daily average	564	597	586	382	435	449	
Month	17,484	16,716	18,166	11,460	13,485	13,470	90,781
Daily average	32,047	31,436	30,442	30,304	29,957	30,059	30,701
Total first six months 1933	993,457	880,208	943,702	909,130	928,667	901,770	5,556,934
Total first six months 1932	1,101,618	1,008,562	1,062,897	1,048,620	1,064,602	1,023,970	6,309,267
Total first six months 1931	1,574,955	1,402,492	1,469,245	1,412,220	1,446,274	1,344,450	8,645,636
Total first six months 1930	1,817,685	1,606,376	1,817,871	1,734,460	1,669,895	1,704,060	10,332,347
Total first six months 1929	2,453,536	2,154,194	2,303,734	2,188,680	2,220,158	2,112,270	13,432,562
Total first six months 1928	2,791,922	2,571,575	2,687,948	2,472,600	2,342,847	2,075,911	14,443,802
Total first six months 1927	4,076,469	3,574,256	3,852,920	3,378,240	3,493,669	3,365,760	21,742,314



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drilled in this territory though several others have gone 6,000 feet, and more, so far as footage is concerned.

Another wildcat, in Claiborne Parish, had reached a total depth of 6,608 feet—next to the Arkansas well referred to the deepest yet drilled as to footage, and was scheduled to go to 7,000 feet before abandonment. So far it has developed only sufficient gas to force mud out of the drill stem on drill stem tests at 4,390, 5,144-80 and 5,747 feet, with more or less salt water accompanying. The same interests drilled to below 4,000 feet 3 miles east of the Haynesville Pool of Claiborne Parish and got nothing, and another group, drilling to 4,707 feet on a deep test in the southeast corner of Haynesville proven territory, abandoned the hole on a salt water test after previous tests at 4,300, 4,414 and 4,606 feet were salty or dry with a slight show of gas.

Scattered Deep Tests

What is, for that part of the country, a deep test was abandoned in the Morehouse Parish part of the Monroe gas field at 3,523 feet, and in Zwolle a semiwildcat drilled to 4,000 feet and two or three others in proven territory carried to intermediate depths between the 2,600-foot producing horizon and this depth, also were dry. On the other hand, a Converse well drilled to 3,400 feet was a commercial gasser, and as this is written a well drilled to 4,600 feet in the southwest corner of DeSoto Parish is scheduled to drill plug after setting 6⅝-inch casing as second string at 4,454 feet. It has had three shows; gas at 2,080-89 feet in a tight sand, 4,141-98 feet in the same character of sand, 4,240-46 feet in oolithic lime and again in 20 feet of soft sand in which they recovered part of a core showing for a heavily saturated gas. Still another deep test, a wildcat about halfway between Zwolle and Converse production, is shut down at 7,000 feet after passing up gas shows at 3,300 feet and oil and water at 3,600 feet, with a later test of hot salt water at around 5,900 feet which was successfully shut off.

Many Leases Blocked

Blocking has continued throughout the territory to an extent remarkable in the face of prevailing conditions. While most of the blocks assembled have been small, 5,000 acres or less, with contracts calling for 2,500 to 4,500-foot tests, there have been several of much larger proportions, particularly along the Conroe-Jackson trend across the central portion of the State just south of Alexandria, the play taking a northeast trend from southern Vernon and northern Beauregard Parishes east to Avoyelles and Concordia Parishes and thence into Mississippi at Wilkinson, Adams and Amite Counties into the Jackson-Rankin County gas field and thence southeast into the south central and southeastern counties of the State. Two or three or more blocks running into the hundreds of thousands of acres have been leased in southern Mississippi and one or two in southwestern Louisiana in the line of the trend, with any number of smaller blocks ranging from 5,000 acres up sandwiched in between. Most of these, big and little, are on straight commercial leases with no drilling obligations and small bonus and renewals. It seems to be a case of looking to the future rather than with any definite plans for immediate development though there have been half a dozen wells begun and finished.

The latest of these were George Greer and others' No. 1 Louisiana Central Lumber Co. in Section 2-9-6, Catahoula Parish, in the east central part of the State, which blew out from around 2,744 feet with an estimated 15,000,000 feet of gas and 5,000 bbls. of salt water from the Wilcox, with drill stem in the hole. Twelve hours later it bridged and was abandoned and No. 1-B on the same lease and section is drilling after a dry test at 2,753 feet. This vicinity is rather favorably looked upon as the next prospective gas field in North Louisiana as during the last five years, or so, other wells have developed similar volumes of gas only to be lost in the end, one of them catching fire.

In spite of the fact that North Louisiana has been thoroughly punctured with shallow tests during the last 25 years the geologists claim that there are plenty of unexplored "noses" of proven structures warranting exploration, and with continued improvement in conditions in general and the oil industry in particular there is apt to be an increase in field work during the latter half of the year. The number of operations carried on field reports has been growing from month to month and there is no reason why activity should not continue on the increase.

In addition to the shallow drilling that will continue in Converse and Zwolle there will be the development of the numerous blocks that have been built throughout the territory and back of that the deep drilling, in the results of which faith seems to be getting stronger and stronger. Deep drilling will be relative; what might be a deep test for one locality would not necessarily be a deep hole in another. However, the idea that it will take 6,000 to 8,000-foot holes to develop new flush production anywhere in the district is growing.

The Conroe-Jackson trend probably will come in for quite a play. South and central Mississippi appear to be holding considerable interest and will likely continue to be drilled.

Arkansas, except for Miller County, has been practically inactive all year but is showing signs of reviving. The border counties of East Texas are in the same situation but not much activity is looked for there.

NORTH LOUISIANA

Completions by Parishes First Six Months of 1933

	Comp.	Prod.	Dry	*Gas
Allen	1	0	1	0
Beauregard	3	0	3	0
Blenville	3	0	3	0
Bossier	3	1	2	0
Caddo	17	33	7	3
Caldwell	0	0	0	0
Catahoula	1	0	1	0
Claiborne	3	0	2	1
Concordia	1	0	1	0
DeSoto	6	0	6	0
Grant	1	0	1	0
Jackson	0	0	0	0
Lincoln	0	0	0	0
Morehouse	1	0	1	0
Natchitoches	3	0	3	0
Ouachita	4	0	1	3
Rapides	0	0	1	0
Red River	3	40	1	0
Richland	0	0	0	0
Sabine	90	9,410	50	0
Union	3	0	3	0
Vernon	2	0	2	0
Webster	3	0	3	0
West Carroll	0	0	0	0
Winn	1	0	1	0
Total	149	9,484	93	12

*Gas production: Caddo, 79,702,000 feet; Claiborne, 40,000,000 feet; Ouachita, 21,150,000 feet; Sabine, 5,000,000 feet; total, 145,852,000 feet.

Completions by Months

	Comp.	Prod.	Dry	Gas
January	21	2,220	10	2
February	18	2,990	11	1
March	28	543	20	1
April	20	1,330	5	1
May	33	1,311	27	2
June	24	90	17	4
Total	149	9,484	93	12
Same period 1932	122	21,716	58	19
Difference	27	12,232	35	7

ARKANSAS

Completions by Counties First Six Months of 1933

	Comp.	Prod.	Dry	Gas
Cleburn	1	0	1	0
Cleveland	0	0	0	0
Columbia	0	0	0	0
Desha	0	0	0	0
Hempstead	0	0	0	0
Jefferson	0	0	0	0
Lafayette	2	0	2	0
Lincoln	1	0	1	0
Little River	1	0	1	0
Miller	14	395	9	0
St. Francis	1	0	1	0
Union	8	0	8	0
Woodruff	1	0	1	0
Yell	0	0	0	0
Total	29	395	24	0

Completions by Months

	Comp.	Prod.	Dry	Gas
January	7	200	6	0
February	4	0	4	0
March	1	45	0	0
April	3	0	3	0
May	7	150	2	0
June	6	0	9	0
Total	28	395	24	0
Same period 1932	18	335	16	0
Difference	10	60	8	0

EAST TEXAS GAS AREA

Completions by Counties First Six Months of 1933

	Comp.	Prod.	Dry	Gas
Bowie	2	0	2	0
Cass	2	0	2	0
Harrison	2	0	2	0
Marion	1	0	1	0
Panola	1	0	1	0
Red River	0	0	0	0
Shelby	4	0	4	0
Total	12	0	12	0

Completions by Months

	Comp.	Prod.	Dry	Gas
January	0	0	0	0
February	7	0	7	0
March	0	0	0	0
April	1	0	1	0
May	4	0	4	0
June	0	0	0	0
Total	12	0	12	0
Same period 1932	24	0	18	6
Difference	12	0	6	6

MISSISSIPPI

Completions by Counties First Six Months of 1933

	Comp.	Prod.	Dry	*Gas
Amite	0	0	0	0
Bolivar	1	0	1	0
Clarke	0	0	0	0
Covington	1	0	1	0
George	1	0	1	0
Hinds	4	0	1	3
Jackson	1	0	1	0
Jasper	1	0	1	0
Lamar	1	0	1	0
Monroe	1	0	1	0
Newton	0	0	0	0
Rankin	4	150	0	3
Scott	0	0	0	0
Sunflower	4	0	4	0
Warren	0	0	0	0
Webster	0	0	0	0
Wilkinson	0	0	0	0
Total	19	150	12	6

*Gas production: Hinds, 66,000,000 feet; Rankin, 132,295,000 feet; total, 198,295,000

Completions by Months

	Comp.	Prod.	Dry	Gas
January	1	0	0	1
February	6	150	4	2
March	1	0	1	0
April	3	0	3	0
May	3	0	1	2
June	5	0	4	1
Total	19	150	12	6
Same period 1932	35	0	8	27
Difference	16	150	4	21

ALABAMA

Completions by Counties First Six Months of 1933

	Comp.	Prod.	Dry	Gas
Baldwin	0	0	0	0
Cullman	0	0	0	0
Escambia	0	0	0	0
Lamar	0	0	0	0
Washington	1	0	1	0
Total	1	0	1	0

Completions by Months

	Comp.	Prod.	Dry	Gas
May	1	0	1	0
Total	1	0	1	0
Same period 1932	0	0	0	0
Difference	1	0	1	0

One of the Many Rough Spots on the Iraq Pipe Line

Trackson Crawler Tractors are used to a large extent in the difficult work of preparing the right-of-way, ditching, stringing pipe and laying the pipe for the Iraq Pipe Line Co.'s 1200-mile line

North Central, West Texas and Panhandle

(Continued from Page 77)

of 5,192 feet, plugging back to 4,140 feet before shooting. This well opened up another area producing from the deeper

PANHANDLE DISTRICT

The Panhandle district had its price and proration troubles during the year. Many of the operators in the district asked for permits to erect natural gasoline plants to process their gas as the larger purchasing companies refused to take equitably from all gas producing leases in the field. Many petitions were sent the railroad commission for such permits, many of which have been granted and plants proposed. Several such plants are expected within the next few months.

All activities in the district were held to a minimum during the past six months. Only 87 producers were completed and 9 tests abandoned, the latter being wildcats, which is an exceptionally small number for such a vast area. Fourteen gas wells were completed in the six months.

Distance from markets has been a deciding influence against crude produced in the Panhandle, companies desirous of taking oil from fields nearer the Gulf ports, such as East Texas, which was a definite factor against conditions becoming better in the Panhandle the past six months. The next six months and year is not expected to see much change in this district, although gas will continue to be a much sought after commodity, regardless of the amount being produced and wasted in the district at the present time. The commission should use more stringent measures in enforcing the conservation of gas in this district, and may call on the Federal Government under the present Industrial Recovery Act to put an end to gas wastage this year. Once this valuable commodity is gone it can never be replaced.

The Skelly Oil Co. erected an eight-car loading rack at LeFors in Gray County to give its Saunders lease an outlet this year. The company is shipping out crude to the Utah Refining Co.'s plant at Salt Lake City, giving the district another small outlet.

The Darby Petroleum Co. and Merry Brothers and Perini drilled a test in Cottle County this year but it was dry. It went to 4,740 feet before plugging. Location was in Section 40, Block B, John H. Stevens Survey.

W. W. Woolsey and A. D. Devore are now drilling a 4,500-foot test in Section 85, Block 2, B.&M. Survey, 4 miles southeast of Amarillo in Randall County. The test is equipped to go to 6,500 feet.

New Wells Drilled in West Canada Could Not Offset the Decline in Crude Oil Production

By VICTOR LAURISTON
Staff Correspondent, Canadian Fields

In the first six months of 1933 the Turner Valley Field in southern Alberta continued to be the major factor in Canadian crude production. The continued decline in this field was reflected in the totals for the entire Dominion, the drop in Alberta production offsetting slight gains in both Ontario and New Brunswick.

The official production figures for all Canadian fields are available only for the first four months of the year. The comparative figures in barrels are as follows:

	1932 (bbls.)	1933 (bbls.)
January	94,912	82,778
February	90,841	73,087
March	97,484	87,218
April	96,585	84,974
Total	380,822	328,057

Comparative figures of production for the individual provinces for the same four months are given below:

	Jan.-June, 1932	Jan.-June, 1933
New Brunswick	1,761	3,642
Ontario	40,268	41,962
Alberta	338,792	282,453
Total	380,822	328,057

The detailed monthly figures for the various provinces for the four months of 1933 are given as follows:

	Jan. (bbls.)	Feb. (bbls.)	Mar. (bbls.)	Apr. (bbls.)
Alberta	70,356	62,327	75,325	74,645
New Brunswick	774	788	1,345	835
Ontario	11,648	10,072	10,748	9,494

The Alberta production in the same period is detailed as follows:

	Jan. (bbls.)	Feb. (bbls.)	Mar. (bbls.)	Apr. (bbls.)
Turner Valley naphtha	65,585	57,202	69,306	69,447
Turner Valley light crude	1,183	1,739	2,158	2,012
Red Coulee-Border light crude	2,938	2,760	3,095	2,942
Wainwright heavy crude	650	526	666	244

Natural gas production for all Canadian fields for the same period also shows a considerable decline. This is due less to declining gas reserves than to the decreased consumption due to economic conditions. The comparative figures in thousands of cubic feet are as follows:

	1932 M.C.F.	1933 M.C.F.
January	3,220,097	2,945,452
February	3,043,967	2,526,995
March	3,009,764	2,497,762
April	2,353,619	2,222,556
Total	11,627,437	10,492,765

Turner Valley Situation

Except for a small production of light crude oil from the upper sands, the Turner Valley output consists of crude naphtha extracted from wet gas flows by means of separators. While some of the residual gas was sold to the Canadian Western Natural Gas Co. which in the last few years has drawn practically its entire gas supply from that field, the amount of residual gas was far in excess of the possible domestic and industrial consumption in Calgary and other cities served from the field. As a result, the surplus gas was piped to a safe distance and burned wide open.

The amount of naphtha produced, and consequently the immediate returns to the operators, depended on the unrestricted flow of gas. On the other hand, continued wastage, estimated at the peak in excess of 300,000,000 feet a day, presented a conservation problem.

The Alberta government adopted a policy of restricting the wells to 40 per cent of open flow with the proviso that the flow should be limited as nearly as practicable to 240,000,000 feet a day. Metering of all wells was required. At the same time the prohibition against new drilling to the crude naphtha horizon was lifted. This policy went into force on April 15. Pipe line runs for May show a decided upturn, though this may be in part due to other factors than the modification of the conservation policy.

Comparative figures of Turner Valley refinery deliveries are as follows:

	1932 (bbls.)	1933 (bbls.)
January	68,893	43,959
February	67,789	38,597
March	71,533	45,900
April	65,641	45,763
May	65,709	64,661
June	64,324	.....

With the May figures close to those of the same month last year, indications are that the field is coming back to some extent. Refinery deliveries, however, do not represent the entire Turner Valley production, as considerable crude naphtha is, in accordance with Alberta legislation, retailed direct at the wells, or through various marketing agencies.

While modification of the conservation measures contributed to some extent to bring back production, another factor in the same direction is the completion by the Royalite Oil Co. of a large gasoline absorption plant. This plant handles both residual gas, after the major part of the naphtha is extracted by the separators, and also gas delivered direct from some of the older wells. The plant started operations about May 1, but did not get into full operation till early in June. It is expected to deliver an output of between 500 and 600 bbls. a day, which largely represents naphtha previously burned with the residual gas. Independent operators are discussing a second absorption plant which, it is planned, will convert the waste gas into carbon black.

Turner Valley Drilling

The outstanding feature of Turner Valley drilling in the last six months has been the steadily increasing activity in the far south end of the field.

This activity really started late in 1932, but it was stimulated by the completion in May of Mar-Jon-Freehold's No. 1, LSD 9, Section 28-18-2w5. This well reported a wet gas flow from the lime around 16,000,000 feet a day with initial crude naphtha recovery of 460 bbls.

At the end of June there were four tests drilling and two more starting in Section 28. A seventh test by Sterling Pacific Royalties, Ltd., was getting under way in the adjacent Section 33. Further new drilling in this area seems probable this season, and there has been a keen demand for acreage.

At the same time, two tests, Union Drilling Co.'s No. 1, LSD 8, Section 21-18-2w5, and Hoffar-Lundy Syndicate's No. 1, LSD 13, Section 22-18-2w5, are testing the possibility of an extension of the producing area approximately 1 mile south of Mar-Jon-Freehold's No. 1 producer. The Hoffar-Lundy test is down approximately 2,400 feet and should get the lime this season.

In the older portions of the field, Model Oils' No. 2, LSD 16, Section 22-20-3w5, has been the center of interest. This test, drilled a half mile north of Model's No. 1, at last reports was drilling more than 400 feet in the lime with wet gas flow of 5,500,000 feet and estimated naphtha recovery about 50 bbls. It is being deepened for larger production. United Oils' No. 2, LSD 2, Section 24-20-3w5, after failing to get production in the lime, tried, without success, to recover a light crude production encountered in the overlying Dalhousie sands.

In Central Turner Valley, New McDougall-Segur Oil Co.'s No. 6, LSD 11, Section 12-20-3w5, is continuing the development of the light crude horizon in the McDougall-Segur sands, which gives promise of fair returns for shallower and less expensive drilling than is involved in the deep lime tests. McLeod Oil Co.'s No. 4, LSD 16, Section 1-20-3w5, is preparing to go on down with its deep test of the lower formations, standing since last winter at 7,755 feet depth, a record for Canada. Bow Oils' No. 1 Illinois-Alberta, LSD 14, Section 12-20-3w5, is endeavoring to clean out and restore deep lime production.

The Mercury section of South Turner Valley has two tests in progress. Associated Royalties' No. 1, LSD, Section 5-19-2w5, has casing trouble at 3,340 feet, while Miracle Oils' No. 2, LSD 16, same section, is going down from 6,150 feet to test the lime.

Foothills tests which may do further work include one on the Monarch structure, two in the Moose Mountain area and one on the Moose Dome structure.

Great Plains Area

Two widely separated tests in the Great Plains area have attracted considerable attention. Athadome Oils' No. 2, LSD 3, Section 15-66-23w4, in the Athabaska district near the northern limits of Alberta, got a 50-foot sand at 1,650 feet yielding around 20 bbls. a day of 13 gravity crude. The company is planning a series of wells whose output, treated in a small topping plant in the field, is apt to command good prices in this isolated section of the Canadian north.

What appears to be an important strike was reported late in June from a point in Alberta just north of the Montana boundary, where a joint test by Nordon Corp. and C. A. Roney on the Twin River structure in Section 2-2-20w4 encountered a heavy gas flow, estimated at 20,000,000 feet a day. Early reports indicated that the test, on deepening a little, got some crude oil. If the well holds up to earlier indications it may prove an important new field between Lethbridge and the border.

The producing horizon is just below the Ellis-Madison contact. Three wells in this general area last year encountered oil shows in this horizon, though none of them were commercial.

In the Keho Lake area, Hudson's Bay Oil & Gas Co.'s No. 1 Keho, LSD 2, Section 17-11-22w4, was definitely finished in May. An oil show in the top of the Madison failed to develop commercial production but two stray sands in the overlying Benton formation yield a reported pumping production around 6 bbls. a day, which is included in government figures with the Red Coulee returns. In the Milk River area, Commonwealth Petroleum's No. 1 deep test, LSD 8, Section 9-3-15w4, was definitely completed this spring and finished a dry hole at 5,310 feet, though a number of noncommercial shows were encountered.

East of Edmonton, Frontier Development's No. 1, LSD 2, Section 1-55-13w4, on the Two Hills structure finished in salt water at 2,000 feet, after encountering a noncommercial oil sand at 1,887 feet.

Drilling in Ontario

In the Haldimand-Norfolk section of the Niagara Peninsula, considerable shallow drilling for gas has been carried on by Toronto and local companies, a good part of the production being contracted to the Southern Ontario Gas Co. and allied organizations. White Oil Co. of Sarnia has developed a number of gassers near Caledonia, the Emerald Syndicate of Toronto has been active in Haldimand, and while the individual gassers are sometimes small, the general results are satisfactory to the operators.

Tests in Tilbury Field

Much of the drilling in the older fields of Kent County has been on similar lines. Glenwood Syndicate completed two small gassers in the old Tilbury Field, and has since organized as Salina Oil & Gas Co. which is starting a third test. Ralph Dawson has finished another small gasser in the Tilbury Field. Southern Ontario Gas Co. takes production of all these wells.

The same company will take production from the Olga Field in Raleigh Township, where Olga Oil & Gas Co.'s No. 6 is being started. In a western extension of this area last fall a test by F. H. Stover & Son on the Flook farm encountered oil, estimated 25 bbls. a day, but a later well drilled by Producers Gas Corp. on the Cecil Chinnick farm finished dry. The gas area south and east, however, gives promise of a fair production.

In the eastern section of Kent County, Vacuum Gas & Oil Co. of Toronto drilled two wildcat tests in Orford Township near Clearville. The first got a small gas show in the Salina but a shot failed to develop commercial production and the well was abandoned. The second test finished dry.

In the eastern section of the Dover Field, a deep test of the Trenton limestone by Raleigh Development Syndicate has got a couple of small gas pays but at the end of June was still unfinished.

In Essex County, a wildcat test is being drilled by Bon Jasperson in Lot 14, Concession 2, Maidstone Township.

Mosa Township, Middlesex County, inactive for some years, got a play this spring when George Willets finished a shallow producer, estimated 24 bbls. a day flush production, on a lease north of Glencoe. A second test is being started.

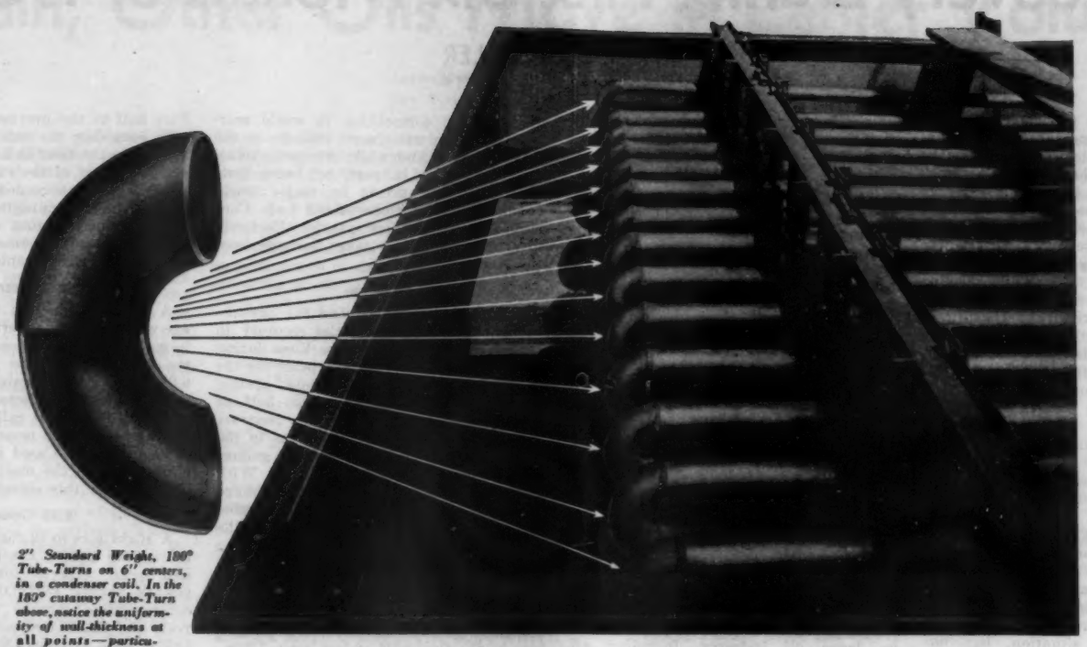
In the old Petrolia Field, some new activities are under way. Earlier in the year Messrs. Welch and Ward undertook chemical treatment of some of the old producing wells, utilizing the Dowell process. So far, results have been largely negative, due apparently to the condition of the well equipment; but it is understood further work will be carried on. Another venture in this area is the drilling by Fred Edward of a 10-inch hole to the lime, testing the theory that better production can be secured in this way than from the small holes typical of the shallow field.

Further north, the British Petroleum Co. is reported drilling a deep test near Aberarder.

Quebec Operations

In Quebec province, a deep test drilled jointly by Canadian Seaboard Oil & Gas, Ltd., and Alberta Gas & Fuel Co., Ltd., at Ste. Angele de Laval in Nicolet County is reported down more than 5,110 feet with some small gas shows.

On the north side of the St. Lawrence some additional drift gas is reported struck in a fifth shallow well drilled by Lanoraie Oil & Gas Syndicate in the Berthier-L'Assomption area, and plans to pipe gas to Joliette are under consideration.



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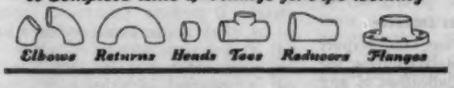


Elbows Returns Heads Tees Reducers Flanges

Refined Products Exports From New York Show Recovery During First Six Months of 1933

By A. E. MOCKLER
New York Bureau, The Oil and Gas Journal

Reflecting heavier foreign demand, attributable in some measure to the abandonment of the gold standard by the United States and the consequent cheapening of the dollar in world exchange markets, refined product exports from New York showed some recovery during the first half of the year, particularly sharp increases being shown by lubricating oil and paraffin wax, while gasoline exports were also larger. A comparative table of exports of principal refined products for the first six months of the year, with comparable totals for the corresponding months of 1932, follows:

	First six months	
	1933 (gals.)	1932 (gals.)
Gasoline	3,896,000	1,804,000
Naphtha	4,584,000	4,777,000
Kerosene	1,188,000	1,372,000
Fuel and gas oil	4,922,000	2,948,000
Lubricating oil	45,313,000	31,121,000
Paraffin wax (lbs.)	55,162,000	38,055,000

The export outlook, in so far as East Coast refiners are concerned, was appreciably brightened as the second half of the year got under way. Not only were foreign buyers coming back into the market in greater numbers, stimulated by the favorable exchange situation, but improved economic conditions in several South American countries, formerly large buyers of refined products from the Atlantic Coast, had improved to such an extent that several eastern refiners, who had virtually withdrawn from these markets during the previous year, due to their inability to remit funds from these countries to cover the cost of shipments made, returned to previous marketing practices and started large volume shipments of products to these countries.

The South American situation during the first half of the year witnessed one unfavorable development, however, in the intensification of competition by Caribbean refiners for this business. One major exporter, who formerly shipped large quantities of cased products out of New York and other Atlantic ports for the South American market, this year undertook a program of refinery expansion at Trinidad, with the idea of supplanting American kerosene and gasoline shipments by deliveries out of Trinidad.

Such a development, however, had been anticipated with the enactment of the oil tariff law last year, which has naturally diverted considerable South American business in refined products to refineries closer to the actual consuming countries.

Another unfavorable development of the year has been the continued expansion in domestic refining operations on the part of many countries formerly drawing a large part of their requirements from refineries in the United States. This tendency will continue, it is believed in well informed export circles, and American refiners must face the fact that they have definitely lost a large part of their previous potential world market.

Export Association Inactive

Contrary to expectations, the Export Association continued inactive during the year thus far, with no indication of any pending revival in operations by that group, which is representative of the leading exporting companies in the American oil industry.

It is still regarded as possible, however, that this association may be revived to serve as the medium for American cooperation with the Rumanian and international groups as soon as readjustment of the domestic situation, under the terms of the industrial recovery act, has made sufficient progress to warrant such a step.

French Refining

There has been a marked increase in French refinery output during the first six months of 1933, several new plants going into operation, and while that country has continued as a buyer of crude in the American market, it has sharply curtailed its foreign purchases of refined products. In fact, France is now making rapid progress as an exporter of refined products, although the bulk of its foreign trade thus far is with its own colonies and dominions.

By the latter part of 1934 it is anticipated that France will be drawing sufficient quantities of crude for its import requirements from Iraq, and this will not only shut off further sales of American crude to that country, but will likewise militate as well against extensive refined product buying in this country by France.

To add to the complexities of the French oil situation, the government of that nation is now aggresively pushing its plans for complete monopolization of its home oil industry, including all branches of the trade.

England

Great Britain continues a leading purchaser of American refined petroleum products, particularly of lubricating oil, and considerable shipments have gone to British ports from here during the half year.

The outlook for continued British buying of American products is less favorable, however. British oil companies operating in South America, Dutch East Indies, Persia and elsewhere are getting a growing share of the home trade, while England, as is the case with France, will be in position to draw large quantities of Iraq crude late next year. Completion of the Iraq pipe line, it is expected, will be signalized by an increase in refining operations in the United Kingdom.

Major American companies, which have accounted for the bulk of American exports of refined products to England, for distribution by their marketing subsidiaries in that country, are, in the main, interested also in the Iraq project.

Russian Competition

Russian competition was not as decisive a factor in the export market during the first half of the year as was the case in 1932. On the contrary, Russia was a buyer of gasoline in both the California and Gulf markets during the period, particularly at the latter point where a number of cargoes of motor fuel were purchased for shipment to Russian Oil Products Co., British marketing subsidiary of the Soviet, during the period in which Russian shipments to England were under embargo.

Rumanian competition in world markets, however, came more strongly to the fore this year and while this competition was controlled, in part, by heavy purchases from Rumania by major world companies, low prices quoted f.o.b. Constanza during the first quarter effectively diverted considerable cargo business from the American market.

Gasoline

Improved foreign demand for gasoline brought about a substantial recovery in export shipments from New York during the first half of the year, exports for the period totaling 3,896,000 gallons, against 1,804,000 gallons in the first half of 1932; 5,184,000 gallons in the first six months of 1931, 9,378,000 gallons in the first half of 1930, and 13,552,000 gallons in the comparable months of 1929. With a continuance of the present exchange situation, refiners look for a favorable export movement of motor fuel during the closing half of the year.

Naphtha

Naphtha exports for the first half of the year showed a slight decline, totaling 4,584,000 gallons, against 4,777,000 gallons in the first half of last year, 7,278,000 gallons for the first six months of 1931, 22,052,000 gallons in the first six months of 1930, and 32,512,000 gallons in the comparable period in 1929.

Kerosene

The decline in demand for cased kerosene brought about a further recession in local exports in the first six months of 1933, shipments aggregating only 1,188,000 gallons, against 1,372,000 gallons in the comparable period last year, 2,207,000 gallons in the first six months of 1931, 4,990,000 gallons in the first half of 1930, and 10,476,000 gallons in the similar period in 1929. Competition from refiners in the Caribbean area was responsible in part for the drop, while Rumanian competition in European markets was also a factor. No signs of improvement in export kerosene demand for the closing half of the year are evident.

Fuel and Gas Oil

An increase of almost 2,000,000 gallons in fuel and gas oil exports developed during the period under review, exports totaling 4,922,000 gallons, against 2,948,000 gallons in the comparable months last year, 2,260,000 gallons in the first six months of 1931, and 2,154,000 gallons and 2,062,000 gallons, respectively, for the first half of the previous two years.

Lubricating Oil

The lubricating oil situation presented the most favorable aspect of the local export period during the first half of 1933. A total of 45,313,000 gallons were exported during the period, a gain of more than 14,000,000 gallons over the exports of 31,121,000 gallons during the first half of the previous year, and likewise exceeding the exports of 42,935,000 gallons in the first half of 1931, and falling just short of the export total of 45,393,000 gallons recorded for the first half of 1930. An encouraging factor with respect to lubs is that much of the increased movement came at a time when prices were rising rapidly.

Refined Petroleum

A further reduction in export gallonage was shown by exports classified merely as "petroleum, refined," shipments for the first half of the year aggregating 6,611,000 gallons, against 7,727,000 gallons, 20,948,000 gallons, 35,028,000 gallons and 43,661,000 gallons, respectively, for the comparable months of 1932, 1931, 1930 and 1929. Cased kerosene and gasoline make up the most part of the gallonage under this classification.

Lub Grease

A slight pickup in foreign shipments of lubricating grease developed during the half year, exports totaling 16,542,000 pounds, against 15,929,000 pounds in the corresponding months of the previous year, and 22,235,000 pounds in the first half of 1931. During the first six months of 1930 exports of this product totaled 27,839,000 pounds, while export shipments for the comparable months of 1929 totaled 30,840,000 pounds. More lubricating grease is being manufactured in foreign plants than was formerly the case, while the general slackening in industrial activity throughout the world has also been a factor making for curtailed consumption.

Paraffin Wax

American wax regained some of its popularity in foreign markets, exports from New York for the half year reaching a total of 55,162,000 pounds, a substantial improvement over the exports of 38,055,000 pounds in the first half of 1932, and likewise in excess of the 41,553,000 pounds exported in the first six months of 1931. Export totals for the first six months of 1930 and 1929, which pounds, respectively, were also outwere 33,872,000 pounds and 36,653,000 stripped in the first six months of the current year.

Exports of crude scale wax also increased during the period at 7,481,000 pounds, against 5,158,000 pounds in the first half last year, 14,520,000 pounds in the first six months of the year previous, 15,804,000 pounds for the first half of 1930, and 11,399,000 pounds in the first six months of 1929.

Refined wax exports also increased, at 6,200,000 pounds, almost double the 3,206,000 pounds exported in the first six months of 1932, and likewise in excess of the exports of 5,505,000 pounds in the comparable period of 1931, although falling short of the 1930 half-year total of 6,708,000 pounds.

A COMPARISON OF EXPORTS OF REFINED PETROLEUM PRODUCTS FROM THE PORT OF NEW YORK
(By quarters for 1933 and the previous three years)

	Gasoline — First quarter				Gasoline — Second quarter			
	1933	1932	1931	1930	1933	1932	1931	1930
Gasoline	1,819,000	1,075,000	2,815,000	5,249,000	2,077,000	729,000	2,370,000	4,109,000
Naphtha	2,708,000	2,754,000	4,038,000	14,732,000	1,876,000	2,023,000	3,240,000	7,330,000
Kerosene	663,000	938,000	1,304,000	2,552,000	525,000	444,000	903,000	2,438,000
Fuel and gas oil	2,675,000	728,000	1,235,000	872,000	2,247,000	2,220,000	925,000	1,482,000
Lub. oil	20,562,000	17,676,000	19,086,000	24,107,000	24,751,000	13,445,000	23,867,000	21,286,000
Pet. refined	2,325,000	4,937,000	11,653,000	20,920,000	2,786,000	2,790,000	9,295,000	15,008,000
	Pounds							
Petrolatum	283,000	815,000	721,000	609,000	370,000	80,000	794,000	482,000
Lub. grease	5,605,000	8,914,000	12,345,000	15,008,000	7,937,000	7,015,000	9,990,000	12,831,000
Paraffin wax	26,373,000	23,580,000	21,060,000	19,313,000	28,789,000	14,475,000	20,492,000	14,554,000
Scale	3,076,000	4,690,000	5,525,000	8,472,000	4,405,000	468,000	7,995,000	7,322,000
Refined	1,033,000	1,870,000	3,690,000	4,542,000	5,167,000	1,336,000	2,415,000	2,166,000

Eastward Shipments of Gasoline From California Gain, Other Oils Move in Larger Volume

By A. E. MOCKLER
New York Bureau, The Oil and Gas Journal

For the first time in the past five years shipments of California gasoline to Atlantic and Gulf Coasts, principally the former, registered an increase for the first six months of the year over the comparable total for the same months in the previous year, shipments during the period having been 4,292,000 bbls., against 4,160,000 bbls. in the comparable period of 1932; 8,211,000 bbls. in the first half of 1931; 8,789,000 bbls. in the first six months of 1930, and 9,527,000 bbls. in the comparable months of 1929.

Of still greater interest to the eastern trade, however, was the resumption of the movement of California fuel oil eastward this year, and the relatively heavy movement of California kerosene to the Atlantic seaboard, principally into the New England area, where a record demand for kerosene distillate is reported. In addition, several cargoes of California gas oil have reached the eastern seaboard thus far in 1933. During the first six months of the current year a total of 841,000 bbls. of California kerosene was shipped intercoastal, with 2,192,000 bbls. of California fuel oil coming eastward, considerable of which was landed at Port Arthur. In addition, 215,000 bbls. of California gas oil was shipped to the Atlantic seaboard during the period, and 16,000 bbls. of California lubricating oil moved eastward.

California Outlook

As the second half of the year gets under way, trade reports indicate that a further increase in the movement of California refined oils to the Atlantic seaboard is in prospect. Eastern refiners are expected to continue to draw on the Pacific Coast for stocks of motor fuel, and California kerosene is likewise expected to move regularly into local territory. The movement of fuel oil will probably decline, owing to the ability of the oil companies to import fuel oil in bond during the closing half of the year, but it is expected that considerable quantities of California distillate will be shipped East during the fall and winter months for domestic heating oils.

An unlooked for factor which may upset plans for moving California oil into the eastern seaboard area and divert some of this business to the Gulf is the strengthening market for oil tankers to move the oil. Virtually a drug on the market during the first half of 1933, tankers are now so much in demand that a large number of American-flag vessels of this time have withdrawn from lay-up and placed into active operation. Only American-flag tankers are eligible for the intercoastal trade, and companies handling this traffic will be faced in some cases with the necessity for chartering foreign boats for some of their foreign runs to enable their American registry vessels to continue in the intercoastal run.

The import tariff on gasoline has had relatively little effect upon intercoastal shipments of motor fuel, which have increased largely due to the fact that refineries on the Atlantic seaboard have been operating on curtailed schedules, necessitating the "importation" of gasoline from California and the Gulf to round out requirements.

In connection with intercoastal shipments it is interesting to note that during the past few weeks the Texas Co. received its first shipments of California gasoline on the eastern seaboard, landing a 100,000-bbl. cargo at its terminals at Claymont, Del., and Norfolk, Va., although the company has hitherto shipped California gasoline to its Gulf Coast plants.

California Surplus

In common with other refining areas, California refineries have reduced their surplus stocks of motor fuel, holdings at refineries at the close of June comparing as follows:

	June 30	
Refining area—	1933 (bbls.)	1932 (bbls.)
East Coast	5,588,000	6,063,000
Appalachian	1,307,000	1,509,000
Ind., Ill., Ky.	4,432,000	5,432,000
Okla., Kans., Mo.	2,599,000	3,346,000
Texas	7,500,000	6,209,000
La.-Ark.	161,000	1,589,000
Rocky Mts.	1,073,000	1,793,000
California	6,493,000	13,062,000
Total	29,103,000	38,823,000

With the statistical position of the gasoline market in California thus showing a marked improvement this year, refiners in that area have shown less disposition to endeavor to unload surplus stocks through the medium of cut prices, and motor fuel quotations at California points are now nearer a parity with other refinery areas.

While some cargoes of California gasoline have moved to the East this year for distribution by independent marketing organizations, the bulk of the movement has been for the account of integrated companies with subsidiary refining organizations in California.

The increase in California shipments this year would have been much greater if the Richfield Oil Corp. of New York had continued its former policy of drawing its motor fuel requirements from the parent California company, but this business has been largely diverted to Arkansas refiners and to the Gulf market this year.

Sun Oil Co. continues a leading eastern distributor of California gasoline, with Socony-Vacuum, Tide Water, Atlantic Refining, and Standard of New Jersey also handling the Pacific Coast product.

Marketing Changes

The status of California gasoline in the eastern market will be vitally affected by the negotiations for the acquisition of the Richfield Oil Corp. of California, now in receivership. If, as now appears likely, Standard Oil Co. of California acquires the Richfield properties, it is expected that the present status of Richfield marketing will be continued, with its output going to supply Pacific Coast and export markets.

If, on the other hand, Consolidated Oil Corp. succeeds in its efforts to take over the Richfield company, or if Cities Service should win out in the race, it is probable that a heavier movement of the Richfield refinery output of gasoline to the East will be witnessed.

The future of the proposed Standard of New Jersey-Standard of California merger will also have a vital bearing on the intercoastal trade in gasoline.

While California gasoline in previous years has been much in demand for distribution in the East as a premium quality motor fuel, the rapid strides which have been made this year in stepping up the antiknock qualities of gasoline produced at East Coast refineries has radically altered the situation, and the Pacific Coast motor fuel is now considered "just another good gasoline" in eastern trade circles.

Many consumers in the aviation industry, however, still continue to show a marked preference for California gasoline as airplane motor fuel.

Comparison of Receipts

A comparison of California gasoline receipts at Atlantic and Gulf Coasts (principally the former) by quarters for the first half of 1933 and the corresponding periods during the past four years follows:

	First quarter (bbls.)	Second quarter (bbls.)
1933	1,861,000	2,431,000
1932	1,915,000	2,244,000
1931	4,403,000	3,808,000
1930	4,698,000	4,091,000
1929	4,827,000	4,700,000

First Six Months' Imports Limited to Crude and Fuel Oil as Tariff Shuts Out Gasoline

By A. E. MOCKLER
New York Bureau, The Oil and Gas Journal

A sharp curtailment in import movement of petroleum and refined products characterized the market during the first six months of 1933, resulting in the diversion of considerable domestic business for refined products to petroleum refined in the United States, with these diversions balanced, in large measure at least, by the transference of export oil shipments, formerly made by tanker out of East Coast and Gulf refining ports, to refining plants in the Caribbean area. Gasoline imports have been entirely lacking thus far in 1933, due to the heavy tariff now in effect against imports of motor fuel, while receipts of foreign crude and fuel oils, which constituted all of the import movement in the first half of the year, were smaller than comparable 1932 levels. In the first half of the past year, however, it must be recalled that imports were abnormally large, due to the fact that major companies with production and refineries in Mexico and South America were rushing in imports to get ahead of the import duties which became effective last June. In as much as gasoline imports in the first half of 1932 amounted to 7,365,000 bbls., it is evident that the domestic market has benefited considerably from the stoppage of imports of motor fuel, even in the face of the slight drop in the consumption of gasoline in the United States this year.

Increase Expected

While import totals on petroleum were smaller for the six months ended June 30 than was the case in comparable periods of recent years, it is indicated that the import movement for the closing half of the year will record some improvement over that for the first six months, due to the fact that effective June 1 importers are now permitted to bring bunker oil into this country in bond, with the oil thus imported to be used for fueling foreign-flag steamships bunkering at American ports. Similarly, foreign crude oil can now be imported to be refined at plants in this country for export, under the drawback provisions of the customs regulations, and this is expected to swell the import movement of crude during the closing half of the year. Thus, while actual imports will be larger than was the case for the six months ended June 30, in all probability, export sales will show a corresponding increase, and the amount of actual foreign oil to reach American consuming markets is expected to continue small, particularly so in view of the declaration embodied in the industry's code of fair trade practices against any substantial increase in the importation of foreign petroleum for sale in domestic markets.

A comparison of imports of crude petroleum, fuel and gas oils, and gasoline, by quarters, for the first half of 1933 and 1932:

(Barrels of 42 gallons)

	First quarter	
	1933	1932
Gasoline	.....	3,778,000
Fuel and gas oil	4,237,000	6,296,000
Crude oil	8,007,000	11,024,000

	Second quarter	
	1933	1932
Gasoline	.....	3,485,000
Fuel and gas oil	2,547,000	6,811,000
Crude oil	6,090,000	12,764,000

With world oil consumption expected to show an increase as industrial recovery makes further progress, producers in Mexico and South America are extending their operations, and while their shipments to the United States for sale in this country will continue limited, they evidently are attempting to establish themselves in as many markets as possible before the advent of Iraq oil on world markets, some time late in 1934.

Continued importation of crude and fuel oils into the United States, in the face of the tariff imposed on imports of these oils, bears out the statements of major companies that certain types of special crudes, not economically available in the United States, are essential for their operations, particularly in the bunker oil market. Practically the entire import movement of these oils thus far in 1933 has been to Atlantic Coast ports, mainly at Philadelphia and New York.

May Ask for Higher Tariffs

Despite the sharp drop in import movement of petroleum, it is reported that some interests in the oil industry will renew their efforts for a further increase in tariffs against oil imports at the next regular session of Congress. These interests, it is reported, desire a flat minimum duty of $1 per barrel on both crude and fuel oils. Enactment of such legislation

would seriously jeopardize the bunker oil business of Atlantic Coast ports, and would undoubtedly either drive this business to Russia and Rumania or force the American companies involved to increase their refining activities abroad and transfer much of their bunker oil selling activities to American ports. The average oil burning vessel, it is pointed out, could readily bunker for a round voyage on the other side of the ocean, if the saving in oil costs warranted such a step. A reaction such as this would not only intensify the unemployment situation in the petroleum industry, but would likewise deprive this Government of considerable tax revenue, which would go to foreign nations to whose ports the bunker oil trade might be transferred. Not only would Atlantic Coast markets be affected, but bunker oil business at the Gulf would undoubtedly seriously suffer from intensified competition from refineries in the Caribbean area.

Gasoline

No imports of gasoline were reported during the first half of the year, with a total of 7,263,000 bbls. imported during the first six months of the past year, and 6,705,000 bbls. during the first six months of 1931.

Revised regulations by the Treasury Department this year effectively shut out the importation of motor fuels which had been coming into this country under the classification of "painters' naphtha" and "cleaners' solvent."

Fuel and Gas Oil

There was a sharp contraction in fuel and gas oil imports during the first six months of 1933, a total of 6,784,000 bbls. being brought in during the period, as compared with 13,107,000 bbls. during the first half of 1932 and 11,038,000 bbls. in the comparable months of 1931.

With the revision, effective July 1, of import restrictions, permitting the importation of bunker oil in bond for delivery to foreign flag vessels taking on fuel oil bunkers at American ports, it is indicated that there will be a sharp recovery in fuel oil prices during the closing half of 1933. A number of tankers have been put back into service to enter the South American run.

Crude Oil

Crude oil imports during the first half of 1933 were less than half of those for the corresponding months of 1932, totaling 14,097,000 bbls., as contrasted with 29,788,000 bbls. in the first six months of 1932 and 24,883,000 bbls. for the first half of 1931. The imports during the first six months last year were abnormally high, a total of 18,764,000 bbls. being rushed in during the second quarter of 1932 as refiners sought to accumulate storage holdings of foreign oil in anticipation of the tariff which became effective late in June.

A moderate increase in crude imports during the closing half of the current year is indicated, with this oil to be refined at Atlantic Coast refineries for export, with drawback allowance for the refined products exported.

First Half Year in Kansas Reported More Completions

(Continued from Page 71)

lieved to have helped them increase their production. One of the wells was reported to have increased 300 per cent after the treatment.

Extended Ritz-Canton

The Ritz-Canton Pool in McPherson County continued to be one of the active areas in the State during the first six months of the year. The Viola lime production was extended in February by Tom Palmer and others' No. 1 B. Winn, NE cor. NW SE Section 7-20-2w. The well was completed for 20 bbls. a day. It extended production in the Viola lime to the west in the south end of the field.

In April potential tests in the Ritz-Canton Field showed a big decline compared to the previous potential. The potential production of the 181 wells at that time was 37,242 bbls. compared to 90,410 bbls. on the previous test. The 72 chat wells in the field had a potential of 4,317 bbls. and the 109 Viola lime wells 32,925 bbls. This test was taken over a 48-hour period from April 1 to 3.

An interesting wildcat test was drilled in Pratt County. It was Ninnescah Oil & Gas Co.'s No. 1 Hardesty, SW cor. SE SE Section 28-27-11w, in the northeast corner of the county, found a showing at 3,621-42 feet. Oil rose 700 feet in the hole. It was drilled deeper to 3,965-71 feet, where another showing of oil and gas was found. The well was still drilling on June 30.

Schurr Pool Partly Defined

The Schurr Pool in Rice County, near Raymond, was defined on the east in April by a dry hole. The well was J. McMorrow and Shawver Oil Co.'s No. 1 Kelly, SW cor. NW Section 22-20-10w. It was started about two years ago and drilled to 2,595 feet, where it made approximately 2,000,000 feet of gas and was shut in. It was drilled to the Siliceous lime at a total depth of 3,382 feet, where it found water and was abandoned.

Pennsylvania Grade Fields Suffer Sharp Decline in Field Work in First Half

Completions in the Pennsylvania grade area during the first half of 1933 showed a decided drop in number as compared with the same period in 1932 and daily initial production from the new wells was less than half of that recorded during the first half of the year previous. The number of dry holes was considerably less and the number of gas well completions was nearly that of the 1932 period, indicating that the first half of 1933 was devoted more to the search for gas than for oil.

With Pennsylvania grade crude being quoted at the lowest prices since 1898 and with curtailment in effect in all areas there was little incentive for development work and the additional outpouring of crude.

Bradford was the banner field in new completions during the first half of 1933 but trailed both West Virginia and Southeast Ohio in the amount of initial production from drilling activity. In the Bradford Field a great number of pressure wells were put down in the first half year with the oil producing wells to be put down about a year after the drilling of the pressure wells.

West Virginia led in the number of gas wells completed and Southeast Ohio in the amount of new production.

June led in the number of completions and reflected the lifting of curtailment and the increasing price for crude. The second half of 1933 is expected to witness considerable gain in field activity in the Pennsylvania grade area.

The tabulation for the first half of 1933 shows a complete reversal of conditions over the first six months of 1932. Last year the heavy initial production was from the northern fields, the Bradford-Allegany fields showing heavy gains in completions and production, while in 1933 the initial production gain was recorded as coming from West Virginia and Southeast Ohio.

EASTERN FIELDS

A summarized comparison of the Pennsylvania grade area for the first six months of 1933 and 1932 shows the following:

	Comp.	Prod.	Dry	Gas
Jan.-June, 1933	458	1,429	62	127
Jan.-June, 1932	738	2,884	111	147
Difference	280	1,455	49	20

A field by field comparison for the two periods shows:

First Half of 1933

Field—	Comp.	Prod.	Dry	Gas
Allegany	22	75	0	0
Bradford	170	331	9	1
Venango-Clarion	26	18	3	10
Butler-Armstrong	14	22	2	2
Middle Field	3	7	0	0
N. Y.-Pa. gas	39	0	16	23
Southwest Pa.	16	62	5	5
West Virginia	109	428	19	68
Southeast Ohio	59	486	17	18
Total	458	1,429	62	127

First Half of 1932

Field—	Comp.	Prod.	Dry	Gas
Allegany	87	587	2	1
Bradford	256	883	0	0
Venango-Clarion	36	30	3	8
Butler-Armstrong	16	20	2	3
N. Y.-Pa. gas	43	3	24	18
Middle Field	16	24	2	2
Southwest Pa.	30	67	13	0
Southeast Ohio	117	980	42	12
West Virginia	137	290	23	93
Total	738	2,884	111	147

UNION GAS-OSAGE SALE

Sale of properties of the Union Gas Corp. and the Osage Gas Producing Co. for $103,300 to Donald E. Stewart, agent for the Union Gas system, was announced by Thomas E. Wagstaff, named a special master in the case by Federal Judge Franklin E. Kennamer.

Mr. Stewart represented holders of $2,400,000 of the company's bonds. The firm owns gas leases and pipe lines in Osage and Washington Counties, Oklahoma. The property recently was appraised at $154,937.

Lining Up Pipe on Iraq Line in Palestine

Few New Discoveries in Rocky Mountain Fields

(Continued from Page 80)

field have not been defined in any direction and on the northeastern side it is expected to connect up with the Cut Bank gas area. At present the crude is being marketed to local refineries and in Canada, being trucked to destination. One or more pipe lines shortly will be serving the field. Drilling is entirely with cable tools, but the Texas Co. is moving in a rotary which will determine the advantages, if any, of that type of rig. The average cost of wells is $18,000, including everything.

The new pool discovered is the North Cut Bank, 3 miles south of the Canadian boundary, 13 miles north of the nearest producer in the Cut Bank Field proper, 7 to 8 miles southwest of the Border Field and due north of the Cut Bank gas area. The discovery was made in the Santa Rita Oil & Gas Co. and P. J. Sweeney's No. 1 Jacobson, C NW NW, Section 23-37-5w. It had 1,000,000 feet of gas in the top of the Stewart sand at 2,561 feet and a show of oil. It swabbed 90 bbls. in 24 hours and then went into the Darling sand at 2,625 feet and began flowing by heads. At 2,633 feet it ran into water and it is being plugged back to 2,628 feet. The oil is 28 gravity, a different grade from that found at Cut Bank, and evidently the well is on a separate structure, or terrace, as it runs 400 to 500 feet higher than the Cut Bank producers. This is the only well so far drilled on the structure and the value of the discovery can not yet be fully appraised.

In the Dry Creek Field, in Carbon County, the Ohio Oil Co.'s No. 9 Souders, C NE SW, Section 2-7s-21, was completed in the Lakota sand at 5,471-5,502 feet for 1,000 bbls. per day. It is half a mile northeast and the same distance northwest of the nearest producers. The company had several rigs up for additional wells, but no further drilling is expected this year following an extension of permits by the Government. The oil is of a very high grade, testing 52 gravity.

MONTANA

Summary of Wells Completed First Six Months of 1933

County—	Comp.	Prod.	Dry	Gas
Carbon	1	150	0	0
Glacier	12	1,101	0	1
Liberty	1	5	0	0
Phillips	1	0	0	1
Sweetgrass	1	0	1	0
Toole	1	0	1	0
Yellowstone	1	0	1	0
Total	18	1,256	3	2
Same period 1932	14	5,356	5	1
Difference	4	4,100	2	1

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	2	69	1	0
February	7	277	2	0
March	3	75	0	1
April	3	65	0	1
May	2	195	0	0
June	2	584	0	0
Total	18	1,256	3	2

UTAH

A few small wells at shallow depths in the Virgin Field in Washington County, comprised the only developments in Utah during the first six months of 1933. Little progress was reported in wildcatting and no important tests were drilled to completion.

UTAH

Summary of Wells Completed First Six Months of 1933

County—	Comp.	Prod.	Dry	Gas
Grand	1	0	1	0
Washington	3	2	1	0
Total	4	2	2	0
Same period 1932	1	35	0	0
Difference	3	33	2	0

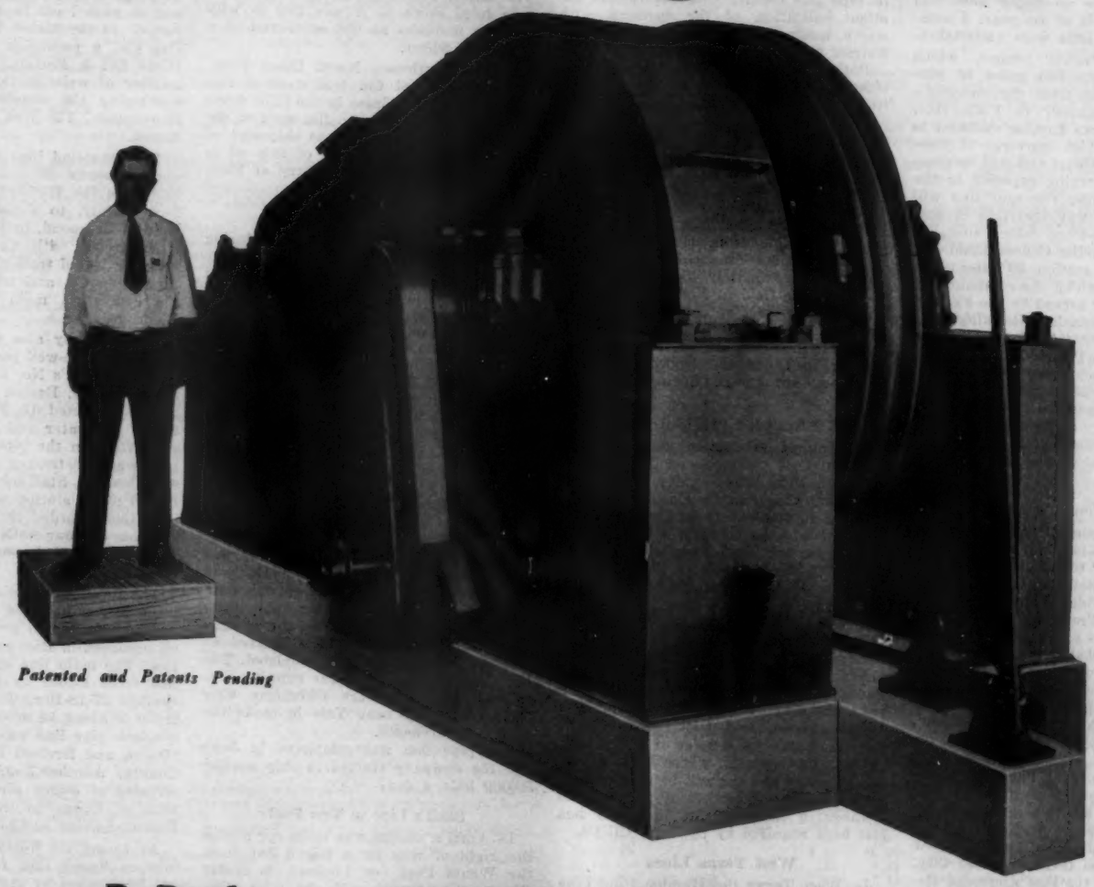
Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	2	0	2	0
February	0	0	0	0
March	0	0	0	0
April	0	0	0	0
May	0	0	0	0
June	2	2	1	0
Total	4	2	3	0

Type 95

OCS

Universal Rig Fronts



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New Pipe Lines in Texas, Oklahoma, Kansas and Other Oil States in First Half of the Year

A surprising amount of pipe line construction took place in the United States in the first half of the year. The work was scattered and little of it was of long lines, but summed up, the total indicated that a considerable number of new pools, and some old pools, were provided with either their first outlet or additional outlet for crude oil production.

The general oil activity which has been going on on the Gulf Coast has been reflected in pipe line construction. Although, with the exception of Sinclair Prairie Pipe Line Co.'s new 12-inch line to the coast from Colonel's Station in Freestone County, there were no major lines laid during the first half of the year, a number of smaller projects were undertaken.

The Sinclair Prairie project, which consists of relaying 140 miles of pipe which was taken up from the company's McLoud, Okla., station to Coffeyville, Kans., system, marks another addition to the many lines which converge at tidewater on the Gulf Coast and will increase that company's carrying capacity to the coast by 45,000 bbls. The new line will follow part of the way the right of way of the old Prairie-Pure 8-inch line but will swing through the Conroe Field and thence to Huffman station, 26 miles north of Houston, from which the company has a 12-inch line, now served by the Prairie-Pure line, to the Sinclair Refining Co.'s refinery at Sinco, east of Houston on the Ship Channel. The Prairie-Pure line, one of the earliest lines built to the coast, extends from Mexia, through Huffman, to Smiths Bluff, south of Beaumont. It has a rated capacity of 35,000 bbls. which will continue available for use of the Sinclair companies, which own a 50 per cent interest in it.

Adds to Conroe's Outlet

By swinging through the Conroe Field, the new line will provide an additional pipe line outlet for that field, now served by Humble Oil & Refining Co., the Texas Pipe Line Co., Tide Water Pipe Line Co. and Channel Transport & Marketing Co. Sinclair has no production of its own at Conroe but probably will be a strong competitor as a purchaser.

Laying of the new line was undertaken because of the expiration in September of a contract which the Sinclair company has with the Stanolind Pipe Line Co. for the transportation of 25,000 bbls. daily through the latter's trunk line from North and East Texas to the coast. That line, originally owned by the Sinclair companies, has its present terminus at the Sinclair refinery at Sinco, but it is now being extended from there to Texas City, where it will serve the Pan American Refining Corp., an affiliated company which is constructing a new 25,000-bbl. plant at that point. Material already is moving for the Stanolind extension, which will consist of 31 miles of 12-inch pipe.

Stanolind Pipe Line Co. also is engaged in another pipe line construction project on the coast consisting of the laying of 45 miles of 10-inch pipe from its Huffsmith station north of the new Tomball Field to Baytown. This line will follow the right of way of the company's present trunk line to as far as Dawes Switch, a place approximately 8 miles northeast of Houston where the main line turns southward to the Sinclair refinery at Sinco. Stanolind has extensive acreage holdings in the Tomball district, although no actual production as yet.

Lines to Tomball Pool

The discovery of production at Tomball has occasioned the laying of two other pipe line outlets, one by Humble Pipe Line Co. and the other by Magnolia Pipe Line Co. The Humble line, consisting of 13 miles of 8-inch pipe, extending from the field to Satsuma on the company's trunk system to the coast, already has been put in operation, although the field is less than two months old. Magnolia's line, only recently started, made up of approximately 17 miles of 8-inch pipe, still is under construction. It extends northward to Conroe where it will tie into the company's North Texas-Beaumont trunk system. A gathering system of 6, 8 and 10-inch pipe also is being laid.

The laying of these three lines out of Tomball so soon after the discovery of the field and before the potential value can be determined sets another precedent in pipe line construction but this is another indication of the sureness with which leasing and development in that district has been carried on.

Both Humble and Magnolia have provided pumping station and storage facilities on tracts south of the Tomball Field.

Other Conroe Outlets

Two additional pipe lines also have been laid out of the Conroe Field this year. Tide Water Pipe Line Co. put in 18 miles of 8-inch pipe from the field to Humble, where it ties in with Texas Pipe Line Co.'s line from Humble to Port Arthur. Channel Transport & Marketing Co. laid approximately 45 miles of 8-inch line from the field to Norsworthy on the Ship Channel east of Houston where the American Petroleum Co. has storage and terminal facilities. Besides these lines, Texas Pipe Line Co. looped its 8-inch line from Conroe to Big Spring, a distance of 14 miles.

Livingston Provided For

Proving of production at Livingston, southern Polk County, was the incentive for Shell Pipe Line Co. laying a 6-inch line from the field to Goodrich, a distance of approximately 6 miles, where the line ties into the company's East Texas-Houston trunk line. Two oil wells, one owned by Shell Petroleum Corp. and the other by Dick Schwab, have been completed in the field to date and the line has been running approximately 700 bbls. daily from each.

Laying of a second line from the field already has been started by the Polk County Pipe Line Co., which has just been organized by the Gem Oil Co., a Josey interest, and Dick Schwab. The line will consist of 6 miles of 6-inch pipe, running to Goodrich, where loading rack facilities and storage will be provided for handling the production of the Schwab holdings, a half interest in which has just been acquired by the Gem Oil Co.

West Texas Lines

In West Texas the Humble Pipe Line Co. started laying 24 miles of 6-inch line from the Penn Pool, Ector County, to the Addis and Cowden areas, east and northeast, but Elliott Cowden held up construction for more money for right of way. This led to a hearing at Odessa where the two disputants reached a decision on 50 cents per rod for right of way.

The Humble Pipe Line Co. took up 20 miles of 10-inch line in Comanche and Erath Counties during the half year and moved it to the newly opened Tomball area in Harris County, on the Gulf Coast. Several short connecting lines were laid in the district, such construction being necessitated by the discovery of new pools which needed outlets. All such lines were small and short, connecting from nearby pools or lines.

The Texas Pipe Line Co. removed 21 miles of 4-inch line which formerly served the Bulcher Pool in Cooke County, connecting with its Healdton, Okla., system.

California's Submarine Line

The only line of any consequence laid in California was a submarine pipe line that the Standard Oil Co. constructed to facilitate the loading or discharge of tankers at El Segundo. This line, 3,200 feet in length and consisting of 16-inch pipe, is supplemented by an 8-inch line located parallel to the 16-inch. The two lines are connected at the outer, or seaward end, in order to permit circulation and thus permit cleaning and flushing of the 16-inch submarine line. The submarine pipe line is indirectly connected with a 20-inch gravity line from the El Segundo tank farm, which in turn is hooked up with the company's El Segundo refinery. The seaward end of the line is over a mile from shore as it was tied in with existing facilities at the outer end of a 2,200-foot wharf.

In the Kettleman North Dome Field, the Superior Oil Co. laid a short line from its Huffman lease in the Hills down to a loading rack in the flat area of the valley in order to facilitate shipment of crude oil by trucks. Most of this oil is going to the Caminol's refinery at Hanford, about 20 miles distant.

Major Lines in Oklahoma

Pipe line activity in Oklahoma during the first part of 1933 was featured by two major projects, the laying of an 8-inch line from the Oklahoma City Field to a point near Thrall in Kansas, a distance of 210 miles, and the taking up of a 12-inch line from the Oklahoma City Field to a point near Coffeyville, Kans., a distance of 140 miles.

In March the first part of the Phillips Petroleum Co.'s 8-inch line from the Oklahoma City Field to its Yale station was being tested. It was the first link of the 210-mile pipe line from the Oklahoma City Field to Thrall, Kans., where it will connect with the company's line from Greenwood County to its refinery at Kansas City.

The second link of this pipe line was from the Yale station to the Burbank Field in Osage County and it was completed in April. Regular shipments through this line as far as the storage tanks in the Burbank Field started as soon as the pipe line was completed. The Phillips Petroleum Co. was running considerable oil from the Oklahoma City Field to storage near Yale in tanks the company purchased.

The pipe line was completed in June and the company started to ship around 50,000 bbls. a day.

Shell's Line to New Pool

In April a survey was made for a pipe line right of way for a 6-inch line from the Wentz Pool (or Lucien), in Noble County, to connect with the main pipe line system of the Shell Petroleum Corp., a distance of about 26 miles. In June work was started on the line from the company's main line system which runs north and south between Cushing and the Kansas State line. The pipe used in the construction of this line came from a line that was taken up from Stroud to Seminole. This was a twin pipe line and only one of the lines removed. The line was completed on July 1. The company asked for 12,000 bbls. a day from these wells but the Corporation Commission has granted only 8,000 bbls.

Holdenville to Allen

Mid-Continent Petroleum Corp. constructed about 8 miles of 3-inch pipe line from Holdenville to the Allen Field. This was an extension line and was completed in May. The same company completed about 6 miles of 4-inch pipe line from the St. Louis Pool to the West Konawa Pool, in Pottawatomie County.

The Tulsa Petroleum Corp. early in March constructed a 4-inch pipe line from the shallow wells in the West Holdenville Pool, in Hughes County, to a loading rack in Holdenville. The line was about 3 miles long.

Short Lines in Kansas

The pipe line construction work in Kansas mostly consisted of short lines. In February the Globe Oil & Refining Co. announced it would construct a 4-inch pipe line from its refinery at McPherson to the Mabee Pool, a distance of about 12 miles and to the Johnson Pool. The right of way of the pipe line followed the old U. S. Highway south to a point near the south end of the Voshell Pool, and it angled off in a southeasterly direction to the Mabee Pool. Lario Oil & Gas Co., a producing subsidiary of the Globe Oil & Refining Co., completed a number of wells in the Mabee Pool, necessitating the construction of a pipe line outlet. The line was completed in March.

The Stanolind Pipe Line Co. completed approximately 20 miles of 4-inch pipe line from the Richardson Pool, in Stafford County, to a point about 3 miles west of Raymond, in Rice County, where it connected with an 8-inch pipe line which is leased from the Sinclair Prairie Pipe Line Co. and which carries oil to the company's main line system near Eldorado.

The company also extended this pipe line to the one-well pool of the Stanolind Oil & Gas Co.'s No. 1 Scheufler, in Section 9-20-11w, Barton County. This line was constructed to avoid salt marshes where the water and soil have a corrosive effect on the pipe. A pumping station was constructed near the Richardson Pool, in Stafford County, to pump the oil to the station near Raymond. This pipe line afforded the company an outlet from its four wells in the Richardson Pool, which had a potential of 4,900 bbls. daily.

The Sunflower Refining Co. of Hutchinson in April started the construction of a new pipe line to provide an outlet for oil produced in Rice and Ellsworth Counties. The main line system was a 6-inch line from Lyons to the Orth Pool, in Section 27-18-10w, Rice County, a distance of about 14 miles. From this point a 4-inch pipe line was to be built to the Heiken and Breford Pools, in Ellsworth County. Another 3-mile line will be constructed of 3-inch pipe from the southwest of Lyons to the Chase Townsite Pool in Section 32-19-9w, Rice County.

At Lyons the 6-inch line will be tied into an 8-inch line, formerly used as a gas line owned by the Cities Service Co. and part of the natural gas system that delivered gas to various communities in Rice County. This 8-inch pipe line system has been taken over by the Sunflower Refining Co. under contract.

The construction work on the 6-inch pipe line was completed in May and the balance was still under construction when this was written.

The Sunflower Refining Co. is owned and operated by the following companies: Slick, Pryor & Lockhart, Darby Petroleum Corp., Dave Ainsworth and William Ainsworth, and C. L. Brown. These same operators are interested in a block of approximately 27,000 acres of leases, part of which are proven or semiproven in Rice and Ellsworth Counties.

Line to Nikkel and Hollow

The White Eagle Oil Co. constructed a short pipe line from the Ritz-Canton Field to the Nikkel Pool, in McPherson County, and then extended the line to

(Continued on Page 94)

Crude Oil Price Changes First Six Months 1933

GULF COAST

Gulf Coast Grade B, Refugio Light and Lockport

Gravity—	Jan. 1[1]	Jan. 1[2]	Jan. 19[3]	Jan. 20[4]	Mar. 6[5]	May 2[6]	June 17[7]	June 19[8]
Below 20	$.55	$.65	$.55	$.32	$.45	$.30	$.32	$.32
20 to 20.9	.60	.65	.55	.34	.45	.30	.34	.34
21 to 21.9	.62	.65	.55	.36	.45	.30	.36	.36
22 to 22.9	.64	.67	.56	.38	.46	.30	.38	.38
23 to 23.9	.66	.69	.57	.40	.47	.30	.40	.40
24 to 24.9	.68	.71	.58	.42	.48	.30	.42	.42
25 to 25.9	.70	.73	.59	.44	.49	.30	.44	.44
26 to 26.9	.72	.75	.60	.46	.50	.30	.46	.46
27 to 27.9	.74	.77	.61	.48	.51	.30	.48	.48
28 to 28.9	.76	.79	.63	.50	.52	.30	.50	.50
29 to 29.9	.78	.81	.63	.52	.53	.30	.52	.52
30 to 30.9	.80	.83	.64	.54	.54	.30	.54	.54
31 to 31.9	.82	.85	.65	.56	.55	.30	.56	.55
32 to 32.9	.84	.87	.66	.58	.56	.30	.58	.56
33 to 33.9	.86	.89	.67	.60	.57	.30	.60	.57
34 to 34.9	.88	.91	.68	.62	.58	.30	.62	.58
35 to 35.9	.88	.91	.69	.62	.59	.30	.62	.59
36 to 36.9	.88	.91	.70	.62	.60	.30	.62	.60
37 to 37.9	.88	.91	.71	.62	.61	.30	.62	.61
38 to 38.9	.88	.91	.72	.62	.63	.30	.62	.62
39 to 39.9	.88	.91	.73	.62	.63	.30	.62	.63
40 and above	.88	.91	.74	.62	.64	.30	.62	.64

[1]Effective December 15, 1932, by Humble Oil & Refining Co. in Goose Creek, Hull, Liberty, Orange, Pierce Junction, Mykawa, Moss Bluff, Raccoon Bend, Barbers Hill, Sour Lake, Spindletop, Sugarland, West Columbia, Humble, Rabbs Ridge and Refugio light oil. Sinclair Prairie Oil Marketing Co. in Boling, Barbers Hill and West Columbia, December 15. Magnolia Petroleum Co. in Lockport and Iowa, Louisiana, January 1, 1933.

[2]Texas Co., effective December 20, 1932.

[3]Texas Co., effective January 19.

[4]Humble Oil & Refining Co., Gulf Pipe Line Co., Magnolia Petroleum Co., Sun Oil Co., effective January 20.

[5]Texas Co., effective March 6.

[6]May 2 Humble Oil & Refining Co. withdrew gravity price schedule. Texas Co. and Shell Petroleum Corp. did the same May 3, Gulf Pipe Line Co. May 5 and Magnolia Petroleum Co. May 8.

[7]Sinclair Prairie Oil Marketing Co., effective June 17. Humble Oil & Refining Co. and Gulf Pipe Line Co., effective June 19.

[8]Texas Co., effective June 19. Magnolia Petroleum Co. June 20.

Jennings, La. (posted by Gulf Refining Co.)—January 1, 60 cents; January 20, 35 cents; May 5, 25 cents; June 19, 35 cents.

Cameron Meadows, La. (posted by Magnolia Petroleum Co.)—January 1, below 20 gravity, 45 cents; 20-20.9, 50 cents, with 2 cents added for each degree upward to 34 and above at 78 cents. January 20, below 20 gravity, 22 cents; 20-20.9, 24 cents, with 2 cents added for each degree upward to 34 and above at 52 cents.

Refugio, heavy (posted by Humble Oil & Refining Co.)—January 1, 65 cents; January 20, 45 cents; May 2, 30 cents; June 19, 45 cents.

Tomball, Tex. (posted by Humble Oil & Refining Co.)—June 19, 65 cents.

Livingston, Tex. (posted by Shell Petroleum Corp.)—June 30, 50 cents.

WEST TEXAS

	Jan. 1	Jan. 19	May 2	June 19	June 20
Crane, Upton, Ector, Crockett, Howard, Glasscock, Mitchell, Winkler and Pecos Counties	$1.50	[2]$1.30	[3]$1.20	$.30	....
Toborg, Pecos County[4]	....	.40	....	....	$.25

[1]Posted by Humble Oil & Refining Co., Gulf Pipe Line Co., Texas Co., Stanolind Oil & Gas Co. and Magnolia Petroleum Co. Shell Petroleum Co. paying 65 cents.

[2]Posted by Texas Co., followed January 20 by the other purchasers.

[3]Posted by Shell Petroleum Corp.

[4]Posted by Humble Oil & Refining Co., followed by other purchasers.

Lea County, New Mexico, see Rocky Mountain table.

Iatan and Westbrook, same as North Texas.

TEXAS PANHANDLE

Gray County

Gravity—	Jan. 1	Jan. 19[1]	Jan. 26[2]	Jan. 20[3]	May 2[4]	June 17[5]	June 19[6]
Below 35	$.56	$.36	$.34	....	$.20	....	$.34
35 to 35.9	.58	.38	.36	....	.20	....	.36
Below 36	....	....	....	$.30	....	$.30	....
36 to 36.9	.60	.40	.38	.32	.20	.32	.38
37 to 37.9	.62	.42	.40	.34	.20	.34	.40
38 to 38.9	.64	.44	.42	.36	.20	.36	.42
39 to 39.9	.66	.46	.44	.38	.20	.38	.44
40 and above	.68	.48	.46	.40	.20	.40	.46

[1]Posted by Texas Co.

[2]Posted by Humble Oil & Refining Co., Magnolia Petroleum Co. and Gulf Pipe Line Co.

[3]Posted January 20 by Philtex Oil Co.; February 28, Humble Oil & Refining Co.; March 6, Texas Co.; March 7, Magnolia Petroleum Co.

[4]Posted May 2 by Humble Oil & Refining Co.; May 3, Texas Co.; May 6, Philtex Oil Co.; May 8, Magnolia Petroleum Co.

[5]Posted June 17 by Sinclair Prairie Oil Marketing Co.; June 19, Texas Co., Magnolia Petroleum Co., H. F. Wilcox Oil & Gas Co. and Philtex Oil Co.

[6]Posted by Humble Oil & Refining Co. and Gulf Pipe Line Co.

(Carson, Hutchinson and Moore Counties)

Gravity—	Jan. 1[1]	Jan. 1[2]	Jan. 19[3]	Jan. 20[4]	Jan. 20[5]	May 2[6]	June 17[7]	June 19[8]
Below 29	....	$.26	....	....	....	....	....	....
29 to 29.9	....	.28	....	....	....	....	....	....
30 to 30.9	....	.30	....	....	....	....	....	....
31 to 31.9	....	.32	....	....	....	....	....	....
32 to 32.9	....	.34	....	....	....	....	....	....
33 to 33.9	....	.36	....	....	....	....	....	....
Below 34	....	....	$.31	$.29	....	....	....	....
34 to 34.9	....	.38	....	....	....	....	....	....
Below 35	$.51	....	....	....	....	....	....	$.29
35 to 35.9	.53	.40	.33	.31	....	....	....	.31
Below 36	....	....	....	....	$.20	$.18	$.20	....
36 to 36.9	.55	.42	.35	.33	.22	.18	.22	.33
37 to 37.9	.57	.44	.37	.35	.24	.18	.24	.35
38 to 38.9	.59	.46	.39	.37	.26	.18	.26	.37
39 to 39.9	.61	.48	.41	.39	.28	.18	.28	.39
40 and above	.63	.50	.43	.41	.30	.18	.30	.41

[1]Posted December 15, 1932, by Humble Oil & Refining Co. and Continental Oil Co.; December 19, Gulf Production Co.; January 1, 1933, Magnolia Petroleum Co.

[2]Posted December 16, 1932, by Philtex Oil Co.

[3]Posted by Texas Co.

[4]Posted January 20 by Humble Oil & Refining Co., Magnolia Petroleum Co., Continental Oil Co. and Gulf Pipe Line Co.

[5]Posted January 20 by Philtex Oil Co.; February 28, Humble Oil & Refining Co. and Continental Oil Co.; March 6, Texas Co.; March 7, Magnolia Petroleum Co.

[6]Posted May 3 by Humble Oil & Refining Co.; May 3, Texas Co.; May 5, Gulf Pipe Line Co.; May 6, Philtex Oil Co.; May 8, Magnolia Petroleum Co.

[7]Posted June 17 by Sinclair Prairie Oil Marketing Co.; June 19 by Texas Co., Magnolia Petroleum Co. and Philtex Oil Co.

[8]Posted by Humble Oil & Refining Co. and Gulf Pipe Line Co.

CONROE

Gravity—	Jan. 1[1]	Jan. 19[2]	Jan. 20[3]	May 2[4]	June 19[5]	June 20[6]
35 to 35.9	$.30	$.59	$.54	$.30	$.59	$.59
36 to 36.9	.32	.60	.56	.30	.61	.60
37 to 37.9	.34	.61	.58	.30	.62	.61
38 to 38.9	.36	.62	.60	.30	.65	.62
39 to 39.9	.38	.62	.62	.30	.67	.63
40 and over	.90	.64	.64	.30	.69	.64

[1]Posted by Humble Oil & Refining Co. December 15, 1932.

[2]Posted by Tide Water Oil Co.

[3]Posted by Humble Oil & Refining Co. Texas Co. met Humble's prices March 6.

[4]May 2 Humble Oil & Refining Co. withdrew gravity price schedule. Humble's postings were followed by other purchasers with the exception of Tide Water Oil Co., which posted 40 cents a barrel for Conroe oil.

[5]Posted by Humble Oil & Refining Co.

[6]Posted by Texas Co. and Tide Water Oil Co. June 22 these two companies adopted the Humble's schedule.

SOUTH CENTRAL AND SOUTHWEST TEXAS

	Jan. 1	Jan. 20	Mar. 6	May 2	May 3	May 8	June 19
Darst Creek	$.60	[2]$.35	....	[7]$.32	....	....	[10]$.35
Luling	.50	[3].30	....	....	....	[8]$.20	[3].30
Mirando	.55	[4].35	....	[4].25	....	....	[11].35
Pettus	.80	[3].55	....	[3].35	....	....	[3].55
Salt Flat	[1].60	[5].40	....	[9].22	....	....	[5].40
Lytton Springs	.70	[3].45	....	....	....	[3].25	[3].45
Duval County	....	....	[6]$.35	....	[6]$.25	....	[6].35
Saxet	....	....	[6].45	....	[6].30	....	[6].45

[1]Magnolia Petroleum Co. January 1 was paying 75 cents for Salt Flat crude.

[2]Texas Co. January 19 posted 35 cents for Darst Creek; January 20 Magnolia Petroleum Co. posted 35 cents; Humble Oil & Refining Co. and Gulf Pipe Line Co. 40 cents.

[3]Magnolia Petroleum Co.

[4]Magnolia Petroleum Co. and Humble Oil & Refining Co.

[5]Humble Oil & Refining Co. and Gulf Pipe Line Co.

[6]Texas Co.

[7]May 3 by Humble Oil & Refining Co.; May 3, Texas Co.; May 5, Gulf Pipe Line Co.; May 8, Magnolia Petroleum Co.

[8]Humble Oil & Refining Co.

[9]May 3 by Humble Oil & Refining Co.; May 3, Shell Petroleum Corp.

[10]Texas Co. and Magnolia Petroleum Co. posted 35 cents for Darst Creek. Gulf Pipe Line Co. and Humble Oil & Refining Co. posted 40 cents.

[11]Magnolia Petroleum Co. posted 35 cents for Mirando. Humble Oil & Refining Co. posted 40 cents.

Thrall prices same as North Central Texas, less 19½ cents per cwt. freight.

EASTERN FIELDS

	Jan. 1	Jan. 21	May 9	May 22	June 17	June 26
Pennsylvania grade oil in National Transit lines (Pa.)[1]	$1.72	$1.47	$1.27	$1.37	$1.47	$1.57
Pennsylvania grade oil in Southwest Pennsylvania lines (W. Va.)[1]	1.42	1.17	.97	1.07	1.17	1.27
Pennsylvania grade oil in Eureka lines (Pa.)[1]	1.37	1.12	.92	1.02	1.12	1.22
Pennsylvania grade oil in Buckeye lines (Ohio)[1]	1.22	.97	.77	.90	.97	1.07
Corning grade oil in Buckeye lines (Ohio), 25-cent grade[1]	.85	.70	[4].50	.50	[5].60	[6].70
Ragland grade oil in Cumberland lines (Ky.)[1]	.60	....	....	....	....	....
Cabin Creek, W. Va.[3]	1.37	1.12	.92	1.02	1.12	1.22
Bradford Hollow, W. Va.[3]	1.37	1.12	.92	1.02	1.12	1.22
Kelly's Creek, W. Va.[3]	1.37	1.12	.92	1.02	1.12	1.22
Bradford district[3]	1.72	1.47	1.27	1.37	1.47	1.57
Allegany district[3]	1.72	1.47	1.27	1.37	1.47	1.57

[1]Posted by Joseph Seep Purchasing Agency.

[2]Posted by Pure Oil Co.

[3]Posted by Tide Water Pipe Line Co.

[4]Posted May 8.

[5]Posted June 19.

[6]Posted June 27.

MEXICAN CRUDES

	Jan.	Feb.	March	Apr.	May	June
Panuco heavy, f.o.b. Tampico	$.45	$.44	$.44	$.42	$.41	$.375

Note—Prices based on transactions of previous month.

OKLAHOMA, KANSAS, NORTH, CENTRAL AND EAST CENTRAL TEXAS

Gravity—	Jan. 1	Jan. 19[1]	May 2[2]	June 17[3]
Below 25	$.45	....	$.25	[4]$.30
25 to 25.9	.47	....	.25	4.32
26 to 26.9	.49	....	.25	4.34
27 to 27.9	.51	....	.25	4.36
28 to 28.9	.53	....	.25	4.38
Below 29	....	$.28	.25	.28
29 to 29.9	.55	.30	.25	.30
30 to 30.9	.57	.32	.25	.32
31 to 31.9	.59	.34	.25	.34
32 to 32.9	.61	.36	.25	.36
33 to 33.9	.63	.38	.25	.38
34 to 34.9	.65	.40	.25	.40
35 to 35.9	.67	.42	.25	.42
36 to 36.9	.69	.44	.25	.44
37 to 37.9	.71	.46	.25	.46
38 to 38.9	.73	.48	.25	.48
39 to 39.9	.75	.50	.25	.50
40 and above	.77	.52	.25	.52

Postings by Stanolind Crude Oil Purchasing Co., Texas Co., Continental Oil Co. and Sinclair Crude Oil Purchasing Co. include Oklahoma, Kansas and North Texas. Magnolia Petroleum Co. postings include Oklahoma, Kansas, North Texas, Panola County in East Texas, Lytton Springs and Somerset in Southwest Texas. Humble Oil & Refining Co. postings include North Texas, Ranger, Mexia, Powell, Richland, Wortham, Currie, Moran, Nocona, Lytton Springs and Corsicana light. Postings by Carter Oil Co. and Gypsy Oil Co. include Oklahoma and Kansas.

[1]Effective January 18, Stanolind Crude Oil Purchasing Co., Sinclair Prairie Oil Marketing Co.; January 19, Texas Co.; January 20, Magnolia Petroleum Co. (starting at below 25 degrees, 20 cents, with 2 cents added for each degree upward); January 20, Carter Oil Co. in Oklahoma and Kansas and Humble Oil & Refining Co. in North Central and East Central Texas; January 20, Gypsy Oil Co. in Oklahoma and Kansas and Gulf Production Co. in North, Central and East Central Texas; January 18, Globe Oil & Refining Co. and Tide Water Oil Co. in Kansas and Oklahoma; January 19, Empire Pipe Line Co., Shell Petroleum Corp.; January 18, in Oklahoma, Deep Rock Oil & Refining Co., Barnsdall Refineries, Inc., Continental Oil Co., Bell Oil & Gas Co., Tide Water Oil Co., Champlin Refining Co., Anderson-Prichard Corp., Cushing Refining Co., Eason Oil Co., Johnson Oil Refining Co., Mid-Continent Petroleum Corp., Pepper Gasoline Co., Sunray Oil Co., Yale Oil Corp., Twin State Oil Co., Rock Island Refining Co.; January 20, Philtex Oil Co. and Pure Oil Co.; Oklahoma and North Texas, January 18, Continental Oil Co.; Kansas, January 18, Eldorado Refining Co., Vickers Petroleum Co., Skelly Oil Co. (starting below 25 degrees, 20 cents, with 2 cents added for each degree upward); January 19, White Eagle Oil Corp.

[2]May 2 Humble Oil & Refining Co. posted a flat price of 25 cents a barrel for all gravities in North Central and East Central Texas. May 3 Stanolind Crude Oil Purchasing Co., Texas Co. and Sinclair Prairie Oil Marketing Co. did the same. May 5 Gulf Pipe Line Co. did the same. May 6 Stanolind and Shell Petroleum Corp. posted 25 cents in Kansas and Oklahoma. May 8 Carter Oil Co., Gypsy Oil Co., Sinclair Prairie and Empire Pipe Line Co. did the same. May 9 Texas Co. did the same. Magnolia Petroleum Co., effective May 9, posted the following prices in Oklahoma: Below 28 degrees, 20 cents; 28 to 34.9 degrees, 23 cents; 35 degrees and above, 25 cents. In

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CITIES SERVICE OIL CO. (WIS.) Milwaukee, Wis.	CREW LEVICK CO. Philadelphia, Pa.	A. R. NEWCOMBE OIL CO Kingston, N. Y

CITIES SERVICE OIL CO. (DELAWARE), Tulsa, Okla

CITIES SERVICE OILS AND GASOLENES

the fields in which they are buying in Kansas or Oklahoma, or both, the following other companies posted 25 cents a barrel on the date named: Bell Oil & Gas Co., May 2; Barnsdall Refineries, Inc., May 6; Pure Oil Co., May 8; Mid-Continent Petroleum Corp., May 6; Skelly Oil Co., May 6; Vickers Petroleum Corp., May 7; Anderson & Prichard, May 6; Johnson Oil & Refining Co., May 6; Champlin Refining Co., May 6; Yale Refining Co., May 6; Eldorado Refining Co., May 6; Globe Refining Co., May 6; Rock Island Refining Co., May 8; White Eagle Oil Corp., May 9; Continental Oil Co., May 8.

[2]Effective June 17, Sinclair Prairie Oil Marketing Co., Stanolind Crude Oil Purchasing Co., Magnolia Petroleum Co., Continental Oil Co. Effective June 19, Empire Oil & Refining Co. Effective June 17, in Oklahoma alone, Barnsdall Refineries, Inc., Mid-Continent Petroleum Corp., Pure Oil Co., Deep Rock Oil Co., Globe Oil & Refining Co., Golden Rule Refining Co., Tide Water Oil Co. Effective June 17 in Kansas alone, Skelly Oil Co., Dickey Refining Co., Eldorado Refining Co., Derby Oil Co., Kanotex Refining Co. Effective June 19, Gypsy Oil Co. in Oklahoma and Kansas and Gulf Pipe Line Co. in Texas; Carter Oil Co. in Oklahoma and Humble Oil & Refining Co. in Texas; Texas Co. in Oklahoma and Texas. Effective June 20, Shell Petroleum Corp. in Kansas and Oklahoma. Effective June 17, H. F. Wilcox Oil & Gas Co. in Oklahoma.

[4]These graded prices on gravities below 29 were posted by Magnolia, Carter and Shell only.

EAST TEXAS

Jan. 1	Jan.	Apr.	Apr.	June
$.75	$.50[1]	$.10	$.25	$.50

[1]Posted by Tide Water Oil Co. and Sinclair Prairie Oil Marketing Co., January 18; Shell Petroleum Corp., January 19; Texas Co., Magnolia Petroleum Co., Panola Pipe Line Co. and Humble Oil & Refining Co., January 20.

[2]Posted by Texas Co. April 24; by Humble Oil & Refining Co. and Stanolind Crude Oil Purchasing Co. April 25.

[3]Posted by Magnolia Petroleum Co. Other buyers, with the exception of Texas Co., adopted the Magnolia price. May 10 Texas Co. posted 25 cents a barrel. May 13 Humble Oil & Refining Co., which had withdrawn postings, adopted the 25-cent price.

[4]Posted by Sinclair Prairie Oil Marketing Co., Stanolind Crude Oil Purchasing Co. and Magnolia Petroleum Co. June 19 posted by Texas Co., Tide Water Oil Co., Panola Pipe Line Co., Humble Oil & Refining Co. and Gulf Pipe Line Co.

CORSICANA

	Jan. 1	Jan. 20	May 8	June 17
Corsicana, heavy* ..	$.50	$.30	$.20	$.30

*Magnolia Petroleum Co.

ARKANSAS-NORTH LOUISIANA

Caddo, Bull Bayou, Cotton Valley, Sarepta-Carterville, Rainbow, Crichton, DeSoto, Haynesville, Homer (La.), and El Dorado (Ark.)—

Gravity—	Jan. 1	Jan. 19[1]	Jan. 20[2]	May 3[3]	June 19[4]
Below 25 deg .	$.39	....	....	....	....
25 to 25.9	.41	....	....	....	....
26 to 26.9	.43	....	....	....	....
27 to 27.9	.45	....	....	....	....
28 to 28.9	.47	....	....	....	....
Below 29	....	$.28	$.20	$.25	$.28
29 to 29.9	.49	.30	.22	.25	.30
30 to 30.9	.51	.32	.24	.25	.32
31 to 31.9	.53	.34	.26	.25	.34
32 to 32.9	.55	.36	.28	.25	.36
33 to 33.9	.57	.38	.30	.25	.38
34 to 34.9	.59	.40	.32	.25	.40
35 to 35.9	.61	.42	.34	.25	.42
36 to 36.9	.63	.44	.36	.25	.44
37 to 37.9	.65	.46	.38	.25	.46
38 to 38.9	.67	.48	.40	.25	.48
39 to 39.9	.69	.50	.42	.25	.50
40 and above..	.71	.52	.44	.25	.52

[1]Posted by the Texas Co., January 19; Louisiana Oil Refining Co. and Gulf Refining Co., January 20 (starting at below 25 degrees, 30 cents, with 2 cents added for each degree upward).

[2]Magnolia Petroleum Co., January 20; Standard Oil Co. of Louisiana, January 20, posted the following prices: Caddo, below 29 gravity, 20 cents; 40 gravity and above, 44 cents. Sabine and DeSoto, below 29 gravity, 25 cents; 40 and above, 49 cents. Homer, below 29 gravity, 28 cents; 40 gravity and above, 52 cents. Sarepta and Carterville, below 29 gravity, 17 cents; 40 gravity and above, 41 cents. El Dorado, below 29 gravity, 25 cents; 40 gravity and above, 49 cents. Haynesville, below 29 gravity, 19 cents; 40 gravity and above, 43 cents. The above all carry 2 cents differential for each degree in gravity. Smackover, all grades, 20 cents.

[3]Posted by the Texas Co. May 3, by Gulf Refining Co. of Louisiana and Standard Oil Co. of Louisiana May 6, by Magnolia Petroleum Co. May 8. Louisiana-Arkansas Pipe Line Co. posted 16 cents in Urania and 25 cents in other North Louisiana fields.

[4]Posted by the Texas Co., Gulf Refining Co. of Louisiana and Louisiana Oil Refining Co.; by Magnolia Petroleum Co. June 20. Standard Oil Co. of Louisiana, June 19, posted prices as follows (starting below 29 degrees, with 2 cents added for each degree upward to 40 and above): Caddo, 36-50 cents; Homer, 32-56 cents; Haynesville, 29-53 cents; Sabine, DeSoto, Carterville and Sarepta, 35-59 cents; El Dorado, 37-61 cents.

January 1, Smackover, all grades, posted by Magnolia Petroleum Co., Louisiana Oil & Refining Co., Texas Co.; Gulf Refining Co. of Louisiana, 50 cents; Standard Oil Co. of Louisiana, 30 cents; Root Refineries, 40 cents; Leon Oil & Refining Co. and McMillan Oil Products Co., 40 cents. Urania posted by H. L. Hunt, Inc., and Louisiana Oil & Refining Co., 55 cents. East El Dorado posted by Magnolia Petroleum Co. and Gulf Refining Co., 65 cents.

January 19, Smackover, all grades, posted by Texas Co., 30 cents; January 20, Standard Oil Co. of Louisiana, 20 cents; Magnolia Petroleum Co., 20 cents; Gulf Refining Co., 30 cents; Louisiana Oil Refining Corp., 25 cents. Urania posted by Louisiana Oil Refining Co. and H. L. Hunt, Inc., 25 cents; East El Dorado, January 20, Magnolia Petroleum Co., 30 cents; Gulf Refining Co., 30 cents.

May 3, Smackover, all grades, posted by Texas Co., 20 cents; May 6, Gulf Refining Co. and Standard Oil Co. of Louisiana, 20 cents. May 9, Urania, posted by H. L. Hunt, Inc., 20 cents. East El Dorado, May 3, Texas Co., 25 cents; May 6, Gulf Refining Co. and Standard Oil Co. of Louisiana, 25 cents; May 8, Magnolia Petroleum Co., 25 cents.

June 19, Smackover, all grades, posted by Texas Co., Standard Oil Co. of Louisiana and Magnolia Petroleum Co., 30 cents; Gulf Refining Co., 20 cents; Louisiana Oil Refining Corp., 25 cents. East El Dorado posted June 20 by Magnolia Petroleum Co., 20 cents; Gulf Refining Co., 30 cents. Philtex Oil Co., June 19, posted 20 cents for all grades in Union and Ouachita Counties, Arkansas.

CANADIAN FIELDS

	Jan. 1	Jan. 24
Petrolia*	$1.75	....
Oil Springs†	1.82	....
Turner Valley, Alta.:		
31-35.9	....	$1.41
36-49.9	....	1.90
40-44.9	1.56	....
45-49.9	2.18	....
50 and above	2.80	2.41

*Imperial Oil Ltd. †Imperial Oil, Ltd. and Regal Oil & Refining Co.

CENTRAL WEST FIELDS

	Jan. 1	Jan. 16	May 9	June 16
Lima[1]	$1.00	[2]$.70	$.55	$.75
Wooster[1]	.95	.70	[3].50	.50
Illinois[1]	.87	.62	.47	.67
Indiana[1]	.52	.40	.25	.45
Princeton[1]	.87	.62	.47	.67
Plymouth[1] (shut in)	....	....	....	....
Western Ky.[1] ...	.52	.57	.42	.62
Midland, Mich.[2]..	.95	....	[3].75	....
Somerset, Ky.[2] ..	.65	.45	.50	.60
Hart Co., Ky.[4] ..	.85	.85	...[5]	....
Muskegon	[5].95	....	....	....

[1]Posted by Ohio Oil Co.
[2]Posted by Pure Oil Co.
[3]Purchased by Ashland Refining Co., Ashland, Ky., and delivered through its own pipe line.
[4]Posted by Stoll Refining Co.
[5]Posted by Old Dutch Refining Co., Naphsol Refining Co. paying Mid-Continent gravity scale. Beginning January 18 both companies posted: Below 29 degrees, 51 cents, with 2 cents added for each degree upward to 40 and above at 75 cents. Beginning March 27 all purchasers paid $1.
[6]Posted January 10.
[7]Posted May 8.

ROCKY MOUNTAIN STATES

Ohio Oil Co. and Stanolind Oil & Gas Co.

	Jan. 1	Jan. 18	May 9	June 17
Iles, light	$.65	$.40	[1]$.25	$.40
Iles, heavy	.50	.34	....	.34
Florence	.57	....	.25	.30
Dutton Creek, Wyo.	.59	.34	.25	.34
Rock Creek, Wyo.	.67	....	....	.52
Frannie, light	.51	.31	.25	.31
Frannie, heavy ..	.41	.20	.20	....
Big Muddy	.75	....	[2].25	.46
Grass Creek	.87	.62	....	....
Grass Crk., heavy	.45	....	....	....
Elk Basin	.87	.62	....	....
Lance Creek	.92	....	....	....
Poison Spider ...	.70	....	....	....
Hudson	.65	....	....	....
Lander	.40	....	....	....
Rex Lake	1.10	....	....	....
Osage	.93	.52	....	....
Lost Soldier	.80	....	....	....
Hamilton Dome..	.75	....	....	....
Torchlight	....	.62	.35	.62
Greybull	.87	.62	.35	.62
Cat Creek	.87	....	[3].35	.62
Pondera	.60	....	....	.75
Sunburst, Mont...	.75	....	[4].65	.80
Hogback, N. Mex.	.80	.65	.50	.65
Border, Mont. ...	1.55	....	....	....
Red Coulee, Alta.	1.55	....	....	....
Lea Co., N. Mex..	.50	.30	.20	.45
Maljamar	.45	.25	....	[5].35
Artesia-Jackson..	.50	.30	....	[5].35

[1]Posted May 6, all grades.
[2]Posted May 6 by Continental Oil Co., May 8 by Ohio Oil Co.
[3]Posted May 6.
[4]Posted May 9.
[5]Posted June 19.

Note—Cat Creek, Hudson, Greybull, Hogback and Iles posted by Stanolind Oil & Gas Co. and remainder by Ohio Oil Co. Both companies posted Grass Creek light and Elk Basin. Lost Soldier posted by Producers & Refiners Corp. Artesia-Jackson and Maljamar posted by Continental Oil Co. Border and Red Coulee posted by Imperial Refining Co. Fort Collins, Wellington, Orchard, Florence, Rattlesnake and Table Mesa posted by Continental Oil Co. Fort Collins, Wellington and Greasewood are on contract basis. Osage posted by Arro Oil & Refining Co. Lea County at beginning of year posted by Shell Petroleum Corp. and Humble Oil & Refining Co.; January 20, by Humble Oil & Refining Co.; May 3, by Humble, followed by other purchasers; June 19, by all purchasers. Salt Creek and LaBarge follow Mid-Continent price schedule.

CALIFORNIA

STANDARD OIL CO. OF CALIFORNIA*

(For current purchases of crude at the well, unless otherwise specified. All gravities above those quoted take highest price offered in that field.)

Gravity—	Signal Hill Jan. 1	Signal Hill Mar. 5	Signal Hill June 26	Seal Beach, Alamitos Heights Jan. 1	Seal Beach, Alamitos Heights Mar. 5	Seal Beach, Alamitos Heights June 26	Huntington Beach Jan. 1	Huntington Beach Mar. 5	Huntington Beach June 26	Inglewood Jan. 1	Inglewood Mar. 5	Inglewood June 26	Playa Del Rey Jan. 1	Playa Del Rey Mar. 5	Playa Del Rey June 26	Olinda-Brea Canyon Jan. 1	Olinda-Brea Canyon Mar. 5	Olinda-Brea Canyon June 26
14-14.9	$.65	$.55	$.55	$.65	$.55	$.55	$.65	$.55	$.55	$.65	$.55	$.55	$.65	$.55	$.55	$.65	$.55	$.55
15-15.9	.65	.55	.55	.65	.55	.55	.65	.55	.59	.65	.55	.58	.65	.55	.55	.65	.55	.58
16-16.9	.65	.55	.55	.65	.55	.55	.65	.55	.60	.65	.55	.61	.65	.55	.58	.65	.55	.61
17-17.9	.65	.55	.57	.65	.55	.55	.65	.58	.63	.65	.58	.64	.65	.58	.61	.65	.58	.64
18-18.9	.65	.57	.60	.65	.55	.56	.65	.61	.65	.65	.61	.67	.65	.60	.64	.65	.61	.67
19-19.9	.65	.59	.62	.65	.57	.60	.65	.63	.68	.65	.64	.70	.65	.62	.67	.65	.64	.69
20-20.9	.69	.61	.66	.69	.59	.62	.69	.64	.71	.71	.67	.73	.69	.64	.70	.69	.66	.72
21-21.9	.74	.63	.69	.74	.62	.67	.74	.66	.73	.77	.69	.77	.74	.66	.73	.74	.68	.75
22-22.9	.79	.65	.71	.79	.64	.70	.79	.68	.76	.82	.71	.80	.78	.68	.76	.79	.70	.77
23-23.9	.84	.67	.74	.84	.67	.73	.84	.70	.78	.88	.73	.83	.82	.71	.79	.84	.72	.80
24-24.9	.89	.69	.77	.89	.69	.77	.89	.72	.81	.92	.75	.86	.86	.73	.82	.89	.73	.82
25-25.9	.93	.71	.80	.93	.72	.80	.93	.74	.83	....	....	....	.91	.75	.85	.93	.75	.85
26-26.9	.97	.73	.82	.97	.74	.83	.97	.75	.86	....	....	....	.96	.77	.88	.97	.77	.88
27-27.9	1.00	.75	.85	....	.76	.87	....	.77	.88	....	....	....	....	....	....	1.00	.79	.91
28-28.9	1.03	.77	.88	....	.79	.90	....	.79	.91	....	....	....	....	....	....	1.03	.81	.94
29-29.9	1.06	.79	.90	....	.81	.93	....	.81	.93	....	....	....	....	....	....	....	....	....
30-30.9	1.09	.81	.93	....	.84	.97	....	.83	.96	....	....	....	....	....	....	....	....	....
31-31.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
32-32.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
33-33.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
34-34.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....

Gravity—	Torrance Jan. 1	Torrance Mar. 5	Torrance June 26	Richfield Jan. 1	Richfield Mar. 5	Richfield June 26	Coyote Hills Jan. 1	Coyote Hills Mar. 5	Coyote Hills June 26	Santa Fe Springs Jan. 1	Santa Fe Springs Mar. 5	Santa Fe Springs June 26	Midway-Sunset, Elk Hills, Buena Vista Hills Jan. 1	Midway-Sunset, Elk Hills, Buena Vista Hills Mar. 5	Midway-Sunset, Elk Hills, Buena Vista Hills June 26	Lost Hills Jan. 1	Lost Hills Mar. 5	Lost Hills June 26
14-14.9	$.65	$.55	$.55	$.65	$.55	$.55	$.65	$.55	$.55	....	....	....	$.55	$.49	$.52	$.55	$.49	$.52
15-15.9	.65	.55	.55	.65	.55	.55	.65	.55	.55	....	....	....	.55	.49	.52	.55	.49	.52
16-16.9	.65	.55	.57	.65	.55	.55	.65	.55	.55	....	....	....	.55	.49	.52	.55	.49	.52
17-17.9	.65	.57	.60	.65	.56	.59	.65	.55	.57	....	....	....	.55	.49	.52	.55	.50	.53
18-18.9	.65	.59	.63	.65	.58	.62	.65	.57	.60	....	....	....	.55	.49	.52	.55	.52	.56
19-19.9	.65	.61	.65	.65	.61	.66	.65	.59	.63	....	....	....	.55	.49	.54	.55	.54	.59
20-20.9	.69	.62	.68	.69	.63	.69	.65	.61	.65	....	....	....	.59	.52	.57	.59	.56	.62
21-21.9	.74	.64	.70	.74	.66	.72	.66	.63	.68	..	$.57	$.60	.63	.55	.61	.63	.58	.66
22-22.9	.79	.66	.73	.79	.68	.75	.70	.65	.71	....	.59	.64	.69	.57	.65	.69	.60	.68
23-23.9	.84	.68	.75	.84	.70	.78	.76	.67	.73	....	.62	.67	.75	.60	.69	.75	.62	.70
24-24.9	.89	.70	.78	.89	.73	.82	.81	.69	.76	$.73	.64	.70	.81	.63	.72	.81	.63	.73
25-25.9	.93	.72	.80	.93	.75	.85	.86	.71	.79	.79	.66	.73	.87	.66	.76	.87	.65	.76
26-26.9	....	.73	.83	....	.77	.88	.90	.72	.82	.84	.69	.76	.92	.68	.80	.91	.67	.79
27-27.9	....	....	....	....	.80	.92	.94	.74	.84	.89	.71	.80	.97	.71	.83	.94	.69	.81
28-28.9	....	....	....	....	.82	.95	.98	.76	.87	.94	.73	.83	1.02	.74	.87	.99	.71	.84
29-29.9	....	....	....	....	.84	.98	1.02	.78	.90	.98	.76	.86	1.07	.76	.91	1.02	.73	.87
30-30.9	....	....	....	....	....	....	1.05	.80	.92	1.02	.78	.89	1.13	.79	.95	1.05	.75	.89
31-31.9	....	....	....	....	....	....	....	.82	.95	1.06	.80	.93	....	.82	.98	....	....	....
32-32.9	....	....	....	....	....	....	....	.84	.98	1.10	.83	.96	....	.85	1.02	....	....	....
33-33.9	....	....	....	....	....	....	....	.86	1.01	1.14	.85	.99	....	.87	1.06	....	....	....
34-34.9	....	....	....	....	....	....	....	.88	1.03	1.18	.87	1.03	....	....	....	....	....	....
35-35.9	....	....	....	....	....	....	....	....	....	1.22	.90	1.05	....	....	....	....	....	....
36-36.9	....	....	....	....	....	....	....	....	....	....	.92	1.08	....	....	....	....	....	....
37-37.9	....	....	....	....	....	....	....	....	....	....	.94	1.11	....	....	....	....	....	....
38-38.9	....	....	....	....	....	....	....	....	....	....	.96	1.14	....	....	....	....	....	....

(Continued on Next Page)

CALIFORNIA (Continued)
(Continued from Preceding Page)

Gravity—	Athens, Rosecrans, Dominguez			Montebello			Wheeler Ridge			Coalinga			Whittier-La Habra			Elwood Terrace (f.o.b. ship)		
	Jan. 1	Mar. 5	June 26	Jan. 1	Mar. 5	June 26	Jan. 1	Mar. 5	June 26	Jan. 1	Mar. 5	June 26	Jan. 1	Mar. 5	June 26	Jan. 1	Mar. 5	June 26
14-14.9	....	....	....	$.65	$.55	$.55	$.55	$.49	$.52	$.55	$.49	$.52	$.65	$.55	$.55	....	....	....
15-15.9	....	....	....	.65	.55	.55	.55	.49	.52	.55	.49	.52	.65	.55	.55	....	....	....
16-16.9	....	....	....	.65	.55	.55	.55	.49	.52	.55	.49	.52	.66	.55	.57	....	....	....
17-17.9	....	....	....	.65	.55	.55	.55	.49	.52	.55	.49	.52	.65	.57	.60	....	....	....
18-18.9	....	....	....	.66	.55	.55	.55	.49	.52	.55	.49	.52	.65	.59	.62	....	....	....
19-19.9	....	....	....	.65	.55	.55	.55	.49	.52	.56	.49	.52	.66	.61	.65	....	....	....
20-20.9	....	....	....	.65	.55	.55	.57	.49	.52	.59	.49	.53	.68	.63	.68	....	....	....
21-21.9	....	....	....	.67	.55	.58	.60	.50	.55	.62	.51	.56	.72	.65	.71	....	....	....
22-22.9	....	....	....	.70	.57	.60	.63	.52	.57	.65	.53	.59	.77	.67	.74	....	....	....
23-23.9	....	....	$.68	.72	.60	.64	.66	.54	.60	.68	.55	.61	.83	.69	.76	....	....	....
24-24.9	$.69	$.65	.71	.76	.62	.67	.69	.56	.63	.72	.57	.64	.89	.71	.79	....	....	....
25-25.9	.93	.68	.75	.80	.65	.71	.72	.58	.66	.76	.59	.67	....	....	....	....	....	....
26-26.9	.97	.70	.79	....	.68	.75	....	....	....	....	....	....	....	....	....	....	....	....
27-27.9	1.00	.73	.82	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
28-28.9	1.03	.75	.86	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
29-29.9	1.05	.78	.89	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
30-30.9	1.09	.81	.93	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
31-31.9	1.12	.83	.97	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
32-32.9	1.15	.86	1.00	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
33-33.9	....	.86	....	....	....	....	....	....	....	....	....	....	....	....	....	$1.04	$.83	$.91
34-34.9	....	.86	....	....	....	....	....	....	....	....	....	....	....	....	....	1.10	.85	.94
35-35.9	....	.86	....	....	....	....	....	....	....	....	....	....	....	....	....	1.16	.87	.97
36-36.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.22	.89	1.03
37-37.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.28	.91	1.03

*The Texas Co., January 1, 1933, was paying same prices as the Standard Oil Co. in Signal Hill, Alamitos Heights, Huntington Beach, Torrance, Richfield, Montebello, North Whittier and Santa Fe Springs.

*The Union Oil Co., January 1, 1933, was paying the same price as the Standard Oil Co. in the Signal Hill, Alamitos Heights, Seal Beach, Huntington Beach, Athens, Rosecrans, Domingues, Torrance, Santa Fe Springs, Playa Del Rey, Coyote, Olinda, Brea Canyon, Richfield and Montebello. In Coalinga, Lost Hills, Kern River, McKittrick, Midway-Sunset, Elk Hills and Buena Vista Hills the Union Oil Co. met the Standard Oil Co.'s prices from 14 gravity upward, but posted a price of 50 cents for oil 11 to 13.9 degrees in gravity.

*General Petroleum Co., January 1, 1933, was paying the same prices as the Standard Oil Co. in Rosecrans, Signal Hill, Alamitos Heights, Santa Fe Springs, Inglewood, Torrance, Brea Canyon and Olinda, up to 25.9 degrees; Richfield, Midway-Sunset, Kern River, Mount Poso, Round Mountain and Coalinga and posted in Rincon as follows: 22-22.9 degrees, 68 cents; 23-23.9 degrees, 73 cents; 24-24.9 degrees, 78 cents; 25-25.9 degrees, 82 cents; 26-26.9 degrees, 86 cents; 27-27.9 degrees, 89 cents; 28-28.9 degrees, 92 cents; 29-29.9 degrees, 95 cents, 30 degrees and over, 98 cents. In Rosecrans, General Petroleum Co. pays 65 cents for 14 to 19.9 gravity oil; 20-20.9 degrees, 69 cents; 21-21.9 degrees, 74 cents; 22-22.9 degrees, 79 cents; 23-23.9 degrees, 85 cents, and Standard's prices for oil of higher gravity.

*Associated Oil Co., January 1, 1933, was paying same prices as the Standard Oil Co. in Signal Hill, Huntington Beach, Seal Beach, Alamitos Heights, Richfield, Torrance, Inglewood, Athens, Rosecrans, Domingues, Santa Fe Springs, McKittrick, Kern River, Midway-Sunset, Elk Hills, Buena Vista Hills, Lost Hills, Belridge and Coalinga.

*Kettleman Hills—The Union Oil Co., January 1, 1933, was paying for 33-33.9 gravity oil 91 cents; 34-34.9 degrees, 93 cents; 35-35.9 degrees, 95 cents; 36-36.9 degrees, 97 cents; 37-37.9 degrees, 99 cents; 38-38.9 degrees, $1.01; 39 degrees and over, $1.03. Standard Oil Co., Associated Oil Co. and General Petroleum Co. adopted same price schedule.

*Santa Paula—The Union Oil Co. and the Texas Co., January 1, 1933, were paying as follows: 14 degrees to 19.9 degrees, 66 cents; 20-20.9 degrees, 69 cents; 21-21.9 degrees, 72 cents; 22-22.9 degrees, 75 cents; 23-23.9 degrees, 78 cents; 24-24.9 degrees, 81 cents; 25-25.9 degrees, 84 cents; 26-26.9 degrees, 87 cents; 27-27.9 degrees, 90 cents; 28-28.9 degrees, 93 cents; 29 degrees and above, 99 cents.

*Shields Canyon and South Mountain—The Texas Co. posted same prices as in Santa Paula.

*Orcutt—The Union Oil Co., January 1, 1933, was paying as follows: 16 degrees to 19.9 degrees, 55 cents; 20-20.9 degrees, 59 cents; 21-21.9 degrees, 63 cents; 22-22.9 degrees, 69 cents; 23-23.9 degrees, 75 cents; 24-24.9 degrees, 81 cents; 25-25.9 degrees, 87 cents; 26 degrees and above, 92 cents.

*Playa Del Rey—Subject to a field gathering charge of 5 cents per barrel.

*Newhall, McKittrick and Kern River—Standard Oil Co. posted 55 cents for oil of all grades.

*Ventura Avenue—General Petroleum Co. and Associated Oil Co., January 1, 1933, were paying as follows: 22-22.9 degrees, 72 cents; 23-23.9 degrees, 77 cents; 24-24.9 degrees, 82 cents; 25-25.9 degrees, 86 cents; 26-26.9 degrees, 90 cents; 27-27.9 degrees, 93 cents; 28-28.9 degrees, 96 cents; 29-29.9 degrees, 99 cents; 30 degrees and over, $1.02.

Potrero—Associated Oil Co., January 1, 1933, was paying same prices as paid by all companies in Athens, Rosecrans and Dominguez

PRICE CHANGES OF MARCH 5

Signal Hill—Met on same date by the Texas Co., Union Oil Co. and General Petroleum Co. and Associated Oil Co.

Huntington Beach—The Texas Co., Union Oil Co., General Petroleum Co. and Associated Oil Co. schedules stop at 26-26.9 degrees, 75 cents.

Seal Beach, Alamitos Heights—The Texas Co. met all prices; Union Oil Co., General Petroleum Co. and Associated Oil Co. schedules stop at 26-26.9 degrees, 75 cents.

Athens, Rosecrans, Domingues—Union Oil Co. schedule stops at 25.35.9 degrees, posting 32-32.9 degrees, 85 cents; 33-33.9 degrees, 87 cents; 34-34.9 degrees, 89 cents; 35-35.9 degrees, 90 cents. Associated Oil Co. met Standard Oil Co. schedule; General Petroleum Co. met Standard Oil Co. prices, stopping at 32-32.9 degrees at 86 cents.

Torrance—Met by the Texas Co. Met by Associated Oil Co., General Petroleum Co. and Union Oil Co., up to 25-25.9 degrees, at 75 cents.

Inglewood—Met by Associated Oil Co. and General Petroleum Co.

Playa Del Rey—(Prices subject to 5 cents per barrel gathering charge.) Met by Union Oil Co. schedule starting at 19 gravity.

Olinda-Brea Canyon—Met by Union Oil Co. Met by General Petroleum Co., up to 25-25.9 degrees, at 75 cents.

Santa Fe Springs—Met by the Texas Co., General Petroleum Co., Union Oil Co. and Associated Oil Co.; schedules start at 24-24.9 degrees, 64 cents, and end at 35-35.9 degrees, 90 cents.

East Coyote—Effective March 5, Union Oil Co.: 14 to 16.9 degrees, 55 cents; 17-17.9 degrees, 57 cents, with 2 cents added for each degree upward to 24.24.9 degrees, at 71 cents.

Richfield—Met by the Texas Co.; met by Union Oil Co. up to 25-25.9 degrees, at 75 cents.

Montebello—Met by Union Oil Co. up to 25-25.9 degrees, at 65 cents.

Kern River, Mount Poso, McKittrick, Sunset, Midway, Elk Hills, Buena Vista Hills—effective March 5, Union Oil Co.: 11-13.9 degrees, 44 cents; 14 to 19.9 degrees, 49 cents; 20-20.9 degrees, 52 cents; 21-21.9 degrees, 55 cents; 22-22.9 degrees, 57 cents; 23-23.9 degrees, 60 cents; 24-24.9 degrees, 63 cents; 25-25.9 degrees, 66 cents; 26-26.9 degrees, 68 cents; 27-27.9 degrees, 71 cents; 28-28.9 degrees, 74 cents; 29-29.9 degrees, 76 cents; 30-30.9 degrees, 79 cents. Associated Oil Co. schedule in Midway, Elk Hills and Buena Vista Hills starts at 11 to 13.9 degrees, 40 cents; same as Union Oil Co. schedule from 14 to 29.9 degrees; 30-30.9 degrees, 79 cents.

Montebello—Met by Union Oil Co. up to 25-25.9 degrees, at 65 cents; the Texas Co.'s schedule in Montebello and North Whittier, 14 to 21.9 degrees, 55 cents; 22-22.9 degrees, 57 cents; 23-23.9 degrees, 60 cents; 24-24.9 degrees, 62 cents; 25-25.9 degrees, 65 cents; 26-26.9 degrees, 68 cents.

Santa Paula—Union Oil Co., March 5, 14 to 19.9 degrees, 55 cents; 20-29.9 degrees, 56 cents, with 1 cent added for each degree upward to 25-25.9 degrees, at 61 cents, and then 2 cents added for each degree upward to 30-30.9 degrees, at 71 cents. The Texas Co. posts similar schedule in Santa Paula and Shiells Canyon.

Lost Hills-Belridge—Met by Associated Oil Co. and Union Oil Co., with Union Oil Co. paying 44 cents for 11 to 13.9 degrees gravity.

Coalinga—Met by Union Oil Co. and Associated Oil Co.

Ventura Avenue—Associated Oil Co., March 5, 22-22.9 degrees, 58 cents, with 2 cents added for each degree up to and including 30-30.9 degrees at 74 cents.

Orcutt—Union Oil Co., effective March 5: From 16 to 19.9 degrees, 49 cents; 20-20.9 degrees, 52 cents; 21-21.9 degrees, 55 cents; 22-22.9 degrees, 57 cents; 23-23.9 degrees, 60 cents; 24-24.9 degrees, 63 cents; 25-25.9 degrees, 66 cents; 26-26.9 degrees, 68 cents.

Kettleman Hills—Effective March 5, Standard Oil Co., Union Oil Co. and Associated Oil Co.: 33 to 33.9 degrees, 66 cents, with 2 cents added for each degree upward to 39-39.9 degrees at 78 cents.

Newhall, McKittrick and Kern River—Standard Oil Co. of California, 55 cents for all grades, effective March 5.

PRICE CHANGES OF JUNE 26

Note—The Union Oil Co. met all Standard Oil Co. of California prices in fields where both companies purchase, and posted as follows in East Coyote: 14 to 15.9 degrees, 55 cents; 16-16.9, 57 cents; 17-17.9, 60 cents; 18-18.9, 62 cents; 19-19.9, 65 cents; 20-20.9, 68 cents; 21-21.9, 71 cents; 22-22.9, 74 cents; 23-23.9, 76 cents; 24 degrees and over, 79 cents. Santa Paula, 14 to 15.9 degrees, 55 cents; 19-19.9, 57 cents; 20-20.9, 60 cents; 21-21.9, 62 cents; 22-22.9, 65 cents; 23-23.9, 67 cents; 24-24.9, 70 cents; 25-25.9, 72 cents; 26-26.9, 75 cents; 27-27.9, 77 cents; 28-28.9, 80 cents; 29-29.9, 83 cents; 30 degrees and over, 85 cents. Orcutt, 16 to 18.9 degrees, 52 cents; 19-19.9, 54 cents; 20-20.9, 57 cents; 21-21.9, 61 cents; 22-22.9, 65 cents; 23-23.9, 69 cents; 24-24.9, 72 cents; 25-25.9, 76 cents; 26 degrees and over, 80 cents. Lost Hills and Belridge schedule same as that of the Standard Oil Co. of California in Lost Hills; Mount Poso, Kern River, McKittrick schedule same as Standard's Newhall, McKittrick and Kern River schedule except that Union Oil Co. posts 47 cents for 11 to 13.9 degrees, inclusive. Union Oil Co.'s schedule also posts 47 cents per barrel for 11 to 13.9 gravity in Coalinga, Midway-Sunset, Elk Hills and Buena Vista Hills. Shell Oil Co. and Associated Oil Co. met the Standard Oil Co. of California prices.

Kettleman Hills—33-33.9 degrees, 76 cents; 34-34.9, 78 cents; 35-35.9, 80 cents; 36-36.9, 82 cents; 37-37.9, 84 cents; 38-38.9, 86 cents; 39 degrees and over, 88 cents.

Newhall, McKittrick and Kern River—14 degrees to 19 degrees and over, 52 cents.

Surprising Amount of Pipe Line Construction

(Continued from Page 90)

the Hollow Pool, in Harvey County. The line was completed in March.

The Dickey Oil Co. constructed a new pipe line from its refinery at McPherson to the Ritz-Canton Field and to the Johnson and Mabee Pools, in McPherson County. This line was completed in April.

Pipe Lines in Michigan

Two leading pipe line developments during the first half of 1933 in Michigan provided a double outlet for crude produced in the new Porter Township Midland Pool.

The Pure Oil Pipe Line Co. first extended its gathering system from its Greendale tank farm to the Mattie Yost lease in Section 35, Greendale Township, a distance of 4 miles. Later a similar 6-inch line was laid, connecting the Porter Pool with the tank farm by way of the Yost lease, an additional 7 miles.

Booster stations give the line a capacity of 16,000 bbls. a day, or more than the present daily production of the entire Mount Pleasant Field.

The Simrall Pipe Line Corp., operated by the Roosevelt Refining Co., an independent plant in Mount Pleasant, also laid a 4-inch line from its Struble station in the East Pool, about 10 miles to the heart of the new Porter area.

In Rocky Mountain Area

There were no important oil pipe lines constructed in the Rocky Mountain area during the first half of 1933, but at the end of that period one new system was under way in Montana and several others were in prospect. The one new line was contracted late in June to serve the Cut Bank Field, in Glacier County, Montana, and is being built by the Santa Rita Oil & Gas Co. The contract was awarded to the Winston Brothers Construction Co. of Minneapolis. The line will be 15 miles long and consist of 4-inch pipe and will run from the Santa Rita's two wells in the Blackfeet Indian reservation to a point near the town of Cut Bank on the Great Northern railroad. The project includes gathering lines, a pump station and a telephone system and will cost between $80,000 and $90,000. It will be a common carrier. The Texas Co. also has under consideration a pipe line from Cut Bank to its International refinery at Sunburst, but at the end of the half year no announcement had been made as to whether it will be constructed this year.

Under date of February 28, 1933, Secretary of the Interior Wilbur issued an order requiring operators on Indian lands in the Maverick Springs Field in Fremont County, Wyoming, to begin marketing oil by September 1 from wells which have been shut in on penalty of having leases canceled. W. R. Weeks, Denver, and others applied for and were granted a permit by the Wyoming Public Service Commission to construct a 30-mile line from the field to Pavillion, where it was to connect with a proposed branch railroad from Shoshoni. The operators in the field protested the order and Secretary Ickes, after a hearing, entered an order in June modifying the former order so that operators could continue to shut in the field until prices and conditions warranted the marketing of the oil upon the payment of an additional $1 per year per acre rentals on the leases. This action is expected to delay, at least temporarily, the construction of the line.

Gas Line in Wyoming

The principal gas line construction in Wyoming during the first half of 1933 was in Carbon County, where the Rocky Mountain Gas Co., affiliated with the Ohio Oil Co., acquired the franchise and properties in Laramie of the Laramie Gas Co. and an old oil line of the Illinois Pipe Line Co. from the Rock Creek Field northwest of Laramie to that city and began supplying the city with natural gas from the Dutton Creek Field. Five miles of 6, 8 and 12½-inch pipe was laid to connect the main line with the city distribution system and a 4-mile connection between the distributing system and the old oil line in the Rock River Field were built. The distribution system was overhauled and converted for natural gas and the old oil line was repaired and put into condition. The total cost was approximately $670,000.

Standard Oil Co. of Louisiana extended its line into the Zwolle district of Sabine Parish to afford an outlet for the 200 to 300 bbls. daily production from the half dozen wells in the Converse area, a matter of 10 miles of 4-inch with incidental gathering system.

Crude Oil Producers and Number of Wells They Own in East Texas Fields

Following is a list of crude oil producers in the East Texas area. The figures and letters following the address refer to the number of wells owned and the location of the wells by county. For instance, "3 G," means three wells in Gregg County. The counties shown by letters are Gregg, Upshur, Smith, Rusk and Cherokee.

A

A.B.C.D. Syndicate, P.O. Box 661, Longview, 3 G.
Abercrombie & Harrison, 617 West Bldg., Houston, 10 R.
Abernathy & Ashton, Tyler, 1 G.
Abernathy & Kirkpatrick, Gladewater, 6 G.
Acme Oil Co., 306 N. Green St., Longview, 4 R, 1 G.
T. C. Adams, Bethany, La., 4 R.
Adams & Lyles, Lockhart, 3 G, 4 R.
Adams & Rowe, Inc., Shreveport, La., 1 R.
Ajo Oil Co. & McComas, 818 Merrin Bldg., Dallas, 2 G, 5 R.
Alco Royalty, Tulsa, Okla., 6 G.
H. L. Allen, 1003 Kirby Bldg., Dallas, 1 U.
Allen & Kilgore, Kirby Bldg., Dallas, 1 S.
Allen Oil Co., Kirby Bldg., Dallas, 1 R, 1 G.
Alexander & Rasmussen, 1231 Pierce St., Houston, 1 G.
Alma Pet. Corp., Tulsa, Okla., 7 G, 4 G & U, 6 U.
Almeda Oil Co., Luling, 2 G.
Amalgamated Oil Co., Magnolia Bldg., Dallas, 6 S.
Amada Oil Co., Republic Bank Bldg., Dallas, 7 G.
Amatex Pet. Co., 308 Citizens Bank Bldg., Tyler, 3 G.
Ambassador Oil Corp., 1905 W. T. Waggoner Bldg., Fort Worth, 1 R.
Amerada Petroleum Corp., W. T. Waggoner Bldg., Fort Worth, 59 G.
American Central Oil Co., W. T. Waggoner Bldg., Fort Worth, 1 U.
American Liberty Oil Co., 906 First Nat'l. Bank Bldg., Dallas, 72 R, 8 G.
Amos & Demayo, Route No. 2, Box 4, Kilgore, 1 R.
Geo. S. Anderson, Fort Worth Nat'l. Bank Bldg., Fort Worth, 4 R.
J. F. Anderson, 2 G.
Jos. Anderson et al, 417 Spring St., So. Tyler, 2 R, 2 G.
Anderson & Co., Fair Bldg., Fort Worth, 3 R.
Angle & Kuykendall, Box 947, Longview, 1 G.
W. H. Angle, Box 947, Longview, 2 G.
Ansley & Messingill, Longview, 3 G.
Arcadia Refg. Co., 320 Swann Bldg., Tyler, 4 G, 10 S, 4 U.
C. L. Archer, 219 Mockingbird Lane, Tyler, 2 R.
Arctic Oil Co., W. T. Waggoner Bldg., Fort Worth, 1 G.
Arkansas Drilling Co., 214 Forman Bldg., Longview, 1 G.
Arkansas Fuel Oil Co., Box 1734, Shreveport, La., 61 G, 19 R.
Arkansas Oil Co., 213 Exchange Bldg., El Dorado, Ark., 3 U.
Arkansas Prod. Co., 214 Forman Bldg., Longview, 4 G.
Arrow Oil & Gas Co., 1905 W. T. Waggoner Bldg., Fort Worth, 5 R.
Bert Aston, Franklin Bldg., Oklahoma City, Okla., 8 R.
Aston-Ellis Corp., Route No. 3, Overton, 1 R.
Atkinson & Sandifer Oil Corp., Breckenridge, 1 R.
Atlantic Oil Producing Co., Magnolia Bldg., Dallas, 339 G, 20 G-U, 15 R.
Atlantic & Pacific, Gladewater and Tyler, 1 G.

B

Babcock Oil Co., Denison, 1 R.
Bagby Lot, Tyler, 1 G.
G. T. Bagget, Tyler, 1 G.
Bailey & Trimble, El Dorado, Ark., 1 R, 2 G.
Baldwin & Sulton Oil Co., Walters, Okla., 1 G.
Ball Oil Corp., Henderson, 1 R.
Barkley & Lincoln, Ranger and Gladewater, 3 U.
Barkley & Meadows, City Nat'l. Bank Bldg., Wichita Falls, 12 G.
Barnsdall Oil Corp., Petroleum Bldg., Tulsa, Okla., 48 G, 3 R.
H. L. Barrett, Ponca City, Okla., 2 G.
Bass & Dilliard, Wagner Bldg., Wichita Falls, 5 G.
F. A. Bates, Box 821, San Angelo, Shreveport, La., 4 G, 1 U.
R. P. Bates, 404 Springer Bldg., Tulsa, Okla., 1 G.
Bay Oil Corp., 1903 Exchange Bank Bldg., Tulsa, Okla., 15 G, 9 R.
B & B Oil Co. (C. H. Newman), Lawton, Okla., 1 G.
J. G. Beard, Oklahoma Nat'l. Bank Bldg., Duncan, Okla., 12 G, 1 S.
Beard & Hammond, Fort Worth Nat'l. Bank Bldg., Fort Worth, 7 R.
Bell & Grady, Inc., Dallas, 1 G.
Belrice Oil Co., 906 First Nat'l. Bank Bldg., Dallas, 4 R.
F. W. Bennett, Second Nat'l Bank Bldg., Houston, 2 G.
Jack J. Berry, 131 So. Beckham St., Tyler, 3 G.
I. N. Bettison, 1820 No. Sabinas St., San Antonio, 1 R.
N. Maxwell Betty, 1 R.
P. M. Biddison, Box 361, Overton, 3 R.
Big Indian Oil & Development Co., Huron Bldg., Kansas City, Kans., 8 R, 2 U.
Bill & Dave Oil Co., Shreveport, La., 2 R.
Bishop Corp., 315 Montgomery St., San Francisco, Calif., 5 G.
Harry Black, Peoria, Ill., 2 U.
Black, Collins & Stroube, Dallas, 3 G.
Black-Knight Co., Peoria, Ill., 2 G.
Black & Stroube, Tower Petroleum Bldg., Dallas, 2 R.
H. L. Blackstock, Petroleum Bldg., Oklahoma City, Okla., 3 R, 2 G.
Blackwell Oil & Gas Co., Cushing, Okla., 14 R.
Blalock Bros., Marshall, 2 G.
G. T. Blankenship Oil Co., Gladewater, 1 G.
Bloxom & Nash, Box 234, Henderson, 2 S.
Blue Ribbon Oil Co., 1 G.
Blue Star Oil Co., Dallas, 26 G.
Paul Bond, Rec., Longview, 2 G.
J. R. Bond, Rec., Box 365, Longview, 2 G.
Bond & Gillespie, Box 366, Longview, 1 G.
Bond & Johnson, Longview, 2 G.
Bond & Republic Prod. Co., Longview, 2 G.
Boonie Oil Co., Tyler, 1 R.
S. P. Borden, 721 Slattery Bldg., Shreveport, La., 2 R.
Boxter Oil Corp., Johnstown, Pa., 2 G.
P. D. Bowlin, 319 First Nat'l. Bank Bldg., Henderson, 1 R.
Bowles Oil Co., Corsicana, 2 G.
Bowser & Beckett, 2118 Griffin St., Dallas, 2 R.
Brachman, R., Weatherford, 2 R.
W. W. Bradley, Box 237, Gladewater, 1 G.
Bradstreet & Jackson, Fort Worth, 1 R.
O. P. Breeding et al, Longview, 1 G.
M. Bridges, Box 696, Kilgore, 1 G.
Bridwell et al, 814 City Nat'l. Bank Bldg., Wichita Falls, 2 R.
Bridwell Oil Co. & Pikes, 814 City Nat'l. Bank Bldg., Wichita Falls, 3 G.
British American Oil Prod. Co., 13th Fl., Philcade Bldg., Tulsa, Okla., 3 G, 4 S.
J. H. Brogan, Tyler, 3 S.
Brothers Oil Co., Petroleum Bldg., Fort Worth, 1 R.
C. H. Brown, Box 1665, Longview, 1 U.
C. L. Brown, Orange, 1 U.
W. H. Brown, Longview, 3 G.
Brown Eagle Oil Co., Box 706, Gladewater, 5 G.
Brown & Travis, 1 G.
M. D. Bryant, 2 R.
R. B. Bryant, Box 5033, Dallas, 3 R.
D. M. Buffington, Ledger Bldg., Fort Worth, 1 G.
Bullard Oil Co., Oklahoma City, Okla., 1 R.
Ray Bumpas, 1 G.
C. B. Bunte, Houston, 2 S.
C. B. Bunte, Inc., Houston, 3 S.
Bunte & Droppleman, Wewoka, Okla., 2 S.
Burke Royalty Co., Box 755, Burkburnett, 5 G.
Joe H. Burkett, Overton, 1 R.
Burlingame, J. T., Box 987, Tyler, 2 G.
Burnett & Foshee, Gladewater, 1 G.
Burnett & Lee, Gladewater, 1 G.
Jas. N. Barnes, Box 1448, Longview, 1 G.
Burnham & Giles, Fort Worth, 1 R.
Burton Drilling Co., 1101 Kirby Bldg., Dallas, 7 R.
Butler-Calhoun, Overton, 1 R.
Butler, Calhoun & Boynton, Overton, 2 R.
E. O. Byers, Texarkana, 1 S.
B. G. Byers, 1 S.
Byrd-Frost, Inc., 1108 Tower Petroleum Bldg., Dallas, 22 G, 2 R.

C

California Pet. Co. of Venezuela, 1352 E. 42nd St., New York, N. Y., 13 G, 6 G & U, 22 U.
Cal-Consolidated Oil Co., San Antonio, 3 G.
Cal-Tex Corp., Kilgore, 4 G.
Cameron Oil Co., Tyler, 1 G.
Canadian Oil Co., Canadian, 6 G.
C. Cantwell, Rec., Longview, 1 G.
Caprock Oil Co., 1 G.
Cargile & Dudley, J. W. Harreld & J. F. Lucey, Rec., Longview, 5 G.
A. P. Carr, 1834 N. Argyle Ave., Hollywood, Calif., Gladewater, 3 G, 1 R.
B. F. Carrol, Peoples Nat'l. Bank, Tyler, 2 G.
Joe Carrol, 1 G.
Carrol & Blanc, Box 751, Kilgore, 2 G.
Carrol & Taylor, Box 751, Kilgore, 1 G.
Thos. J. Carter, 707 Citizens Bank Bldg., Tyler, 2 G.
Cash & Coleman, Shawnee, Okla., 1 G.
W. R. Castle, Box 825, San Antonio, 1 G.
C & B Oil Co., 1 U.
Central Drilling Co., 514 Allen Bldg., Dallas, 2 G.
Central Commercial Oil Co., Tulsa, Okla., 5 G.
Central Oil Co., Box 266, Fort Worth, 2 R.
Champlin & Bass, Inc., Dallas, 3 R, 3 U, 12 G.
Chatham Oil Co., Tulsa, Okla., 3 U.
Cherokee Chief Oil Co., Gladewater, 6 G.
Chicago Oil Co., Dallas, 1 R.
Choctaw Oil Co., 206 Forman Bldg., Longview, 2 G.
E. Christian, Longview, 1 G.
Citizens Oil Co., Longview, 1 G.
F. C. Clark, Overton, 1 R.
J. W. Clark, Route No. 2, Longview, 1 U, 1 G.
R. L. Clark, Rec., Dallas, 1 R.
Clark & Cowden, Box 174, Duncan, Okla., 8 G, 5 U.
H. W. Clarkson, 309 So. Broadway, Tyler, 3 U.
Clopton & Lewis, Dallas, 1 G.
Jim Cloud, Thompson Bldg., Tulsa, Okla., 5 G.
Cloud & Manahan, Tulsa, Okla., 10 R, 3 G.
Cloverleaf Oil Co., Magnolia Bldg., Dallas, 2 R.
Coastal Drlg. Co., Inc., Smith-Young Tower, San Antonio, 2 G, 3 R.
D. Cockburn, Frederick, Okla., 1 R, 3 R & S.
C. Cockerham et al, Shreveport, La., 2 R.
Cockburn & Hooker, Gladewater, 1 S.
David Coffman, 1218 First Nat'l. Bldg., Dallas, 1 R.
A. Cohen, 322 Baltimore St., Baltimore, Md., 1 G.
J. M. Collins, Tr., 219 Ricou-Brewster Bldg., Shreveport, La., 2 G.
J. W. Collins, Luling, Tex., 2 G.
Collins, Gray & Wolf, Corsicana, Tex., 5 G.
Collins & Stroube, Corsicana, 6 R.
Colonial Oil Co., Fort Worth, Tex., 1 G.
Columbia Oil & Gas Co., Magnolia Bldg., Dallas, 26 G.
Combined Oil Interest, W. B. Powell, Receiver, Fort Worth, 12 R.
Combs, E. E., Box 151, Arp, 5 R.
Como Oil Corp., Henderson, 1 R.
Concord Oil Co., 1526 Allen Bldg., Dallas, 1 S.
Conico Oil Co., 1 G.
Conservative Oil Co., Tower Petroleum Bldg., Dallas, 5 R, 13 U.
Consolidated Oil & Primrose, Wichita Falls, 1 R.
Continental Oil Co., Ponca City, Okla., and Fort Worth, 11 G.
F. Coogan, Sayre, Okla., 1 R.
Cook Drilling Co., Fort Worth, 1 R.
E. C. Cooper, Overton, 1 R.
O. R. Cooper, 623 So. Kennedy St., Tyler, 1 R, 1 S.
Chas. M. Cope, Inc., 2213 Houston St., San Angelo, 1 G.
Corbin & Cuif, Henderson, 1 R.
Corbin & McGaughy, care H. C. Culp, Henderson, 1 R.
Cordova Union Oil Co., Fort Worth, 9 R.
Corley & Blair, Longview, 2 G.
Cosby, Nelson & Kroll, Box 1837, Tulsa, Okla., 1 R.
Cox & Hamon, Box 276, Ardmore, Okla., 29 G.
C & P Oil Co., Box 1414, Wichita Falls, 12 R.
Crabtree, Foster & Jeffries, Tower Petroleum Bldg., Dallas, 3 R.
Cranfill & Reynolds, Esperson Bldg., Houston, 23 G, 7 U.
Crenshaw Oil Co., Wichita Falls, 2 U.
Crockett, J. B., care Elder Bros. Garage, Kilgore, 1 G.
Cron & Gracey, Houston, 2 S, 1 R.
Cullen Oil Co., Box 574, Henderson, 3 R.
H. C. Culp, 1103 So. Main, Henderson, 2 R.
C. C. Curtiss, Tyler, 1 R.

D

Danciger Oil & Refg. Co., W. T. Waggoner Bldg., Fort Worth, 6 G, 1 R.
M. E. Daniels, 2 R.
Daniels & Scott, 1 R.
Darby Petroleum Co., Thompson Bldg., Tulsa, Okla., 9 R, 10 G.
J. E. Devant, Corsicana, Tex., 2 G.
Kate W. Davis, 610 First Nat'l. Bank Bldg., Dallas, 2 G.
L. Davis, W. T. Waggoner Bldg., Fort Worth, 1 C.
Roy Davis et al, Box 1448, Longview, 1 G.
Davis, Henderson & Hamilton, Box 1448, Longview, 1 G.
C. K. Dawson, Ponca City, Okla., 1 G.
Roy Dawson, 3 G.
Day & Armstrong, Box 505, Gladewater.
Day & Co., Box 505, Gladewater, 1 G.
Day & Hancock, Gladewater, 2 G.
Dean & Adkisson, Inc., 1816 W. T. Waggoner Bldg., Fort Worth, 2 G, 3 U.
Deaner & Reynolds, Okmulgee, Okla., 2 S.
R. H. Dearing & Son, Tower Petroleum Bldg., Dallas, 2 G, 2 R.
Dearing & McBride, Southwest Life Bldg., Dallas, 4 G.
DeArmon Bros., Tyler, 4 R.
DeArmon Prod. Co., Peoples Bank Bldg., Tyler, 3 R.
Deep Rock Oil Co., Atlas Life Bldg., Tulsa, Okla., 17 R, 18 G.
Deep Sand Oil Co., Box 967, Gladewater, 1 G.
Degener & Co., Inc., Tyler 1 R.
W. A. Delaney Box 244, Longview, 3 G.
Delta Drilling Co., Box 965, Longview, 3 G.
DeMayo, Bessie, Longview, 3 G.
DeMontrand Oil Co., Tyler, 4 R.
DeMotte & Geisler, Box 601, Gladewater, 1 G.
Geo. T. Despot, Shreveport, La., 1 R.
Devonian Oil Co., Exchange Bank Bldg., Tulsa, Okla., 34 R, 7 G.
Devonian, Shell & Oliphant, 4 R.
Dillard Oil Co., Wichita Falls, 6 G.
Dillingham, O. D., Ranger, 2 G.
Dinham Oil Corp., Shreveport, La., 2 G.
Dink Oil Co., Atmore, Ala., 1 R.
W. H. Dixon, 1 G.
F. Dodson, 3615 Lexington St., Dallas, 2 G.
Dodwell et al, Box 533, Kilgore, 1 G.
Dolores Oil Co., Tyler, 2 G.
Donelly & Chastain, Tyler, 1 R.
D. Donoghue, Rec., Fort Worth Nat'l. Bank Bldg., Fort Worth, 8 R, 1 G.
D. Donghue, Rec., Fort Worth Nat'l. Bank Bldg., Fort Worth, 2 G, 7 R.
Paul Doran, Longview, and Capps Bldg., Fort Worth, 2 G.
Dorfman & Reynolds, Longview, 3 U.
Dorrough & Smith Oil Co., Marshall, 3 G.
Doty-McGee & Brown, Box 863, Longview, 1 G.
Droppleman Drlg. Co., Wewoka, Okla., 8 R, 2 G.
W. R. Duke et al, 1118 Fair Bldg., Fort Worth, 2 G.
Duncan & Holt, 1513½ Main St., Dallas, 5 R.
J. B. Dunigan, Breckenridge, 1 G.
D. D. D. Oil Co., 218 No. College St., Tyler, 1 G.
G. C. Dunn, Rec., 706 Central Bank Bldg., Dallas, 2 G.
W. H. Dunning, Jr., Fort Worth, 1 R.
C. Dunham, 432 Fleishel Ave., Tyler, 3 R.
Dutton & Hensley Oil Corp., 801 W. Front St., Tyler, 2 G.
Dyck Oil Co., Tulsa, 3 R, 9 G.

E

Earle et al, 1821 Eighth Ave., Fort Worth, 1 R.
East Mt. Prod. Co., Box 661, Longview, 2 U.
East Shore Oil Co., Box 373, Henderson, 4 S.
East Texas Oil Refg. Co., Tower Petroleum Bldg., Dallas, 43 R, 52 G.
G. W. Eaton, Henderson, 1 R.
Ebony Oil Co., Box 491, Henderson, 4 R.
Joe Edgar, St. Angelus Hotel, San Angelo, 1 G.
E. & D. O. Co., Inc., Shreveport, La., 6 U.
Edson Petroleum Co., Box 101, San Angelo, 1 G.
H. B. Edwards et al, Tyler, 1 R.
Edwards Drlg. Co., Houston, 2 G.
E. & F. O., 2 G.
Harry Elliott, Burkburnett Bldg., Fort Worth, 2 R, 7 G, 2 U.
Elsep Oil Co., 1 R.
V. H. Elsey, Dallas, 1 G.
Elsey & Constantine, Dallas, 1 R.
Empire Gas & Fuel Co., Bartlesville, Okla., 91 G, 6 R.
Enterprise Oil Corp., Seminole, Okla., 2 G.
Etnyre Pet. Co., Kirby Bldg., Dallas, 1 R.
Equity Oil Co., 806 Trinity Life Bldg., Fort Worth, 1 G.
Joe Estes, Dallas, 1 R.
Etex Oil Co., Dallas, 2 R.
W. L. Evans, Petroleum Bldg., Fort Worth, 1 G.
C. B. Everett, Gladewater, 1 G.
Everett Oil Co., Tulsa, 4 U.
Everett Drilling Co., Dallas, Tex., 21 R, 3 G.
Everett et al, Dallas, 4 G.

F

Fair & McGaha, Hamilton Bldg., Wichita Falls, 21 G.
Fair et al, Tyler, 2 R.
Fair, R. W., Oil Co., Box 107, Tyler, 5 R.
Fair & Thompson, Box 107, Tyler, 7 R, 4 G.
Faith Oil Corp., Box 1020, Wichita Falls, 13 G, 1 U.
Falcon Oil Co., Neil P. Anderson Bldg., Fort Worth, 15 R.
J. C. Falvey, Longview, 2 U, 1 G.
J. N. Farley, Longview, 5 U, 3 G.
Farlyn Oil Co., Humble Bldg., Houston, 4 G.
Feazel & Curtis, Tyler, 6 G.
Federated Oil Co., City Nat'l. Bank Bldg., Wichita Falls, 9 R.
J. R. Fenton, Route No. 3, Longview, 1 G.
F. H. E. Oil Co., Fort Worth, 22 G, 7 R.
Fifty-Five Oil Co., Box 287, Gladewater, 1 G.
Fine Oil Co., Box 793, Corsicana, 1 G.
Flanagan Prod. Co., Inc., Longview, 1 R, 3 G.
M. T. Flanagan, Longview, 2 G.
L. S. Flannery, Gladewater, 2 G.
Fleming & Kimbell, 1118 Fair Bldg., Fort Worth, 4 G.
Florence Oil Co., Tyler, 1 S, 5 R.
F. & N. Drilling Co., Longview, 4 G.
R. E. Fogleson, Athletic Club Bldg., Dallas, 1 G.
Ford & Sample, Overton, 2 R.
A. B. Foshee, Gladewater, 1 G.
Foster & Jefferies, Tower Pet. Bldg., Dallas, 1 R.
Foundation Oil Co., 2627 Terwilleger Blvd., Tulsa, Okla., 2 G.
Fox & Butler, Petroleum Bldg., Dallas, 3 R.
Friedman & Dorfman, Muskogee, Okla., 1 G, 1 R.
Friedman & Swindler, Muskogee, Okla., 2 R.
A. C. Fritz, et al, Route 2, Box 169, Gladewater, 3 G.
T. Fullwood, Corsicana, 1 R.
E. M. Fulton (Rec.), Longview, 1 G.

G

G. & A. Oil Co., Box 1225, Longview, 1 R.
Galves Oil Corp., Mayo Bldg., Tulsa, Okla., 15 G, 5 U.
Gant, Garvin & Waggoner, Ardmore, Okla., 10 R.
Gant & Waggoner, Ardmore, Okla., 1 S.
J. M. Garrett, Longview, 1 R.
L. Garrison, Rec., Tyler, 4 R.
Gaskey, Henderson, 3 R.
M. E. Gaskell, Tulsa, Okla., 3 G.
S. A. Gaskell, Tulsa, Okla., 2 G.
Gynita Oil Co., First Nat'l. Bank Bldg., Dallas, 1 R.
H. E. Geisler, Gladewater 1 G.
E. H. Gibbs, 1 R.
Gibson, Johnson & Merrick, W. T. Waggoner Bldg., Fort Worth, 1 R.
Gibson Oil Corp., 309 Rule Bldg., Amarillo, 3 U.
Gilcrease Oil Co., Kennedy Bldg., Tulsa, Okla., 5 R, 9 G

S. L. Gillespie, Rec., Tradesmen's Bank Bldg., Oklahoma City, Okla., 2 G.
Gilium, et al, Overton, 2 R.
Glasscock, Longview, 5 G.
T. Glasscock, Longview, 4 G.
Rosa T. Glasscock, Longview, 2 G.
L. Godlin, Box 361, Tyler, 3 U.
Gold Star Oil Co., Box 252, Ardmore, Okla., 1 G.
Alex Goldsmith, 348 Harvey Snider Bldg., Wichita Falls, 1 G.
Goodgame & Eby, Overton, 1 R.
Goodnight Oil Co., Dallas, 5 R.
Goodwin et al, 1 G.
P. B. Goodwin, et al, Clyde Hall, Receiver, Longview, 2 G.
Robt. D. Gordon, 1009 Young St., Ranger, 1 R.
G. & R. Oil Co., San Antonio, 1 G.
Granite Oil Trust, Monrovia, Calif., 2 R.
T. S. Grayson, Trustee, Magnolia, Ark., 1 G.
Great Eastern Oil Co., 211 Construction Bldg., Dallas, 8 R.
Great Western Oil Co., 211 Swann Bldg., Tyler, 3 R.
Great Plains Oil Co., 106 Hurst Bldg., Longview, 4 R.
Greenwood Prod. Co., Esperson Bldg., Houston, 1 G.
George Greer, et al, City Bank Bldg., Shreveport, La., 1 R.
Gregg Holding Co., Box 770, Longview, 2 G.
Gregg Oil Co., Box 706, Longview, 7 G.
Grisham-Hunter, Box 1464, Abilene, 11 G.
Groneman & Doran, Capps Bld., Fort Worth, 4 G.
S. A. Guiberson, Jr., Box 1106, Dallas, 11 G.
Gulf Production Co., Gulf Bldg., Houston, 335 G, 265 R, 18 S.
Gulf State Development Co., Tyler, 1 S, 1 R.
George Guthrie, et al, San Antonio, 2 R.

H

R. Haddaway, et al, Flatiron Bldg., Fort Worth, 1 R.
Hammonds & Benson, Oklahoma City, Okla., 1 G.
M. E. Hale, Trustee, 1 R.
Hall & Lary, Box 1245, Longview, 1 G.
Hamill & Smith, 2nd Nat'l. Bank Bldg., Houston, 5 G.
Hamil, J. G., Rec., Fort Worth, 2 R.
W. B. Hamilton, Box 143, Bridgetown, 1 G.
Harry Hanburry, Pasadena, Calif., 7 G, 3 R.
Hankamer & Cochran, Sour Lake, 1 G.
Hankamer & Lee, Sour Lake, 1 G.
Harcher Oil Co., Box 1505, Kilgore, 2 G.
R. S. Harker, Gladewater, 1 G.
J. C. Harris, Rec., Gladewater, 1 G.
J. T. Harris, Gladewater, 1 R, 1 G.
L. M. Harris, Tulsa, Okla., 1 G.
M. Harris, 502 Marvin Bldg., Dallas, 1 G.
Hastings & Dodson, Kilgore, 2 R, 1 G.
Hastings, et al, Box 124, Kilgore, 1 G.
U. R. Hatcher, Box 1505, Kilgore, 1 G.
Hawkeye Pet. Co., Box 1328, Longview, 9 G, 1 U.
J. C. Hawkins, Tyler, 1 G.
J. M. Haynes, Jr., Tyler, 1 G.
Haynes Drilling Co., Inc., Slattery Bldg., Shreveport, La., 15 R.
H. B. W. Oil Co., c/o Broughton Wilkinson, Tyler, 4 G, 2 R.
Hedrick-Camp Drlg. Co., Republic Bank Bldg., Dallas, 1 G, 2 U.
Heep Oil Co., Esperson Bldg., Houston, 2 R.
Henderson & Holden, Orpheum Bldg., Wichita, Kans., 1 R
Hendrick Ranch Royalty Co., Longview, 2 G.
B. W. Henke, 2 G.
Henry Oil Corp., Luling, 3 G.
Hensley & Dutton, 1 G.
Henson-Fair, 2 R.
Henson Odel, Commerce Bldg., Okmulgee, Okla., 3 R.
Heyser & Heard, Kirby Bldg., Dallas, 7 G.
Heyser-Heard-Sweell, 1 G.
O. L. Hickman, Dallas, 3 R, 2 G.
Hill and Hill, Petroleum Bldg., Fort Worth, 1 G.
Hinchliff, Mexia, 2 R.
Hindman, et al, Alamo Nat'l. Bank Bldg., San Antonio, 1 G.
W. B. Hinton, Box 15, Lockhart, 3 S
M. O. Hobbs, Box 833, Gladewater, 1 G.
M. E. Hodges, Box 1294, Kilgore, 1 G.
P. L. Hoffman, et al, Cisco, 6 G, 1 R.
W. C. Holcomb, 1 G.
H. H. Holden, 403 W. Elm, Tyler, 2 G.
Frank Holliday, Rec., 2 G, 1 R.
W. F. Hallifield, Henderson, 3 R.
John W. Hoosier, Dallas, 15 R.
Horseshoe Syndicate, Dallas, 3 R.
H. Houghton, W. M. Preston, Receiver, Dallas, 1 R.
Houston Oil Co., Petroleum Bldg., Houston, 32 R, 21 G.
Houston Prod. Co., Petroleum Bldg., Houston, 4 R.
Howard Pet. Co., 424 So. Cheyenne, Tulsa, Okla., 9 G.
W. B. Howe, Rec., 5 G.
Roy E. Howell, Box 318, Overton, 1 R.
James B. Hughes, Eddy Bldg., Bloomington, Ill., 2 G.
Hughes & Foley, 4 G.
Humble Oil & Ref. Co., Humble Bldg., Houston, 222 G, 743 R, 7 G, 91 U.
T. D. Humphries, 243 Harvey-Snider Bldg., Wichita Falls, 10 G.
W. G. Humphries, 3615 Lexington St., Dallas, 1 G.
S. S. Hunt, et al, Tyler, 1 G.
S. Hunt & Landrum, Tyler, 1 R.
Sherman Hunt, Box 935, Tyler, 2 R.
Hunt Production Co., Box 935, Tyler, 134 R, 16 S, 3 G.
Hunter & Rowe, Wichita Falls, 5 G, 2 R.
J. C. Hurley, 2 G.
F. P. Hynes, et al, Box 1013, San Antonio, 3 G.

I

Idaho Oil Co., Tyler, 3 G.
Imperator Oil Co. (J. C. Stone & Son), Tower Petroleum Bldg., Dallas, 6 G.
Imperial Petroleum Co., First Nat'l. Bank Bldg., Dallas, 3 G.
Indian Oil Syndicate, Henderson, 2 R.
Inland Oil Co., 1112 Mercantile Bldg., Dallas, 4 G.
International Oil Co. of Texas, Arp, 3 R.
Invincible Oil Co., Los Angeles, Calif., 10 G.
Iotex Oil Co., Winterset, Iowa, 3 R, 1 G.
Iowa Payne Oil Co., Tyler, 9 G, 1 R, 3 S.
Iron Rock Oil Co., Gladewater, 1 G.
B. K. Isaacs, Trustee, Waggoner Bldg., Fort Worth, 6 G.
Island Oil Co., Houston, 6 G, 1 R, 3 U.
Island Oil Co., Houston, 4 G.

J

Jenkins Oil Corp., Republic Bank Bldg., Dallas, 11 R.
J. & J. Petroleum Co., Texarkana, 1 G.
J. O. Oil Co., Box 770, Tyler, 1 G.
Johnson & Burnham, Neil P. Anderson Bldg., Fort Worth, 2 G.
C. M. Johnson, Trustee, Arp, 3 R.
H. L. Johnson, 1 G.
J. E. Johnson & W. B. Pearce, 2758 College, Shreveport, La., 1 G.
T. A. Johnson & Owens, Tr., Box 770, Tyler, 6 G.
F. B. Jackson, 1831 Ninth St., Wichita Falls, 3 R.
Mrs. M. W. Jackson, Overton, 1 R.
Jackson & Bradstreet, Fort Worth, 1 G.
Jackson, Wise & Markham, Sapulpa, Okla., 3 R.
Jackson, Wise & Sneeden, Sapulpa, Okla., 4 G, 9 R.
W. R. Jarrett, 1619 Petroleum Bldg., Oklahoma City, Okla., 1 G.
Jay Kay Oil Co., Box 469, Little Rock, Ark., 2 U.
Jenkins Oil Corp. & Hamilton, Republic Bank Bldg., Dallas, 4 R.
T. A. Johnson, Box 770, Tyler, 4 S, 1 R.
F. A. Johnson, Tr., Tyler, 1 R.
F. A. Johnson, Tr. (S. Maccus), Tyler, 1 R, 1 G.
F. A. Johnson (Tr.), R. Carter, Tyler, 2 S.
Johnston & Rogers, Box 1162, Oklahoma City, Okla., 4 R.
Johnson, Wyche & Yarbrough, Longview, 1 G.
E. M. Jones, Frost Nat'l. Bank Bldg., San Antonio, 2 G.
E. M. Jones & Houston Oil Co., Houston, 14 R.
Jones Bros., E. W., & F. D., Tower Petroleum Bldg., Dallas, 3 R.
Jones, et al, & Houston Oil Co., Houston, Tex., 4 R.
W. R. Jones, & H. A., Union Nat'l. Bank Bldg., Wichita, Kans., 5 U.
Jones, Doss, et al, Liberty Nat'l. Bank Bldg., Oklahoma City, Okla., 10 G.
Jones & O'Brien, Inc., Box 1152, Shreveport, La., 22 G.
Jones & Oliver, 3 G.

K

Karona Oil Co., Corpus Christi, 2 R.
Kathleen Oil Co., McAlester, Okla., 3 G.
Katter & Mansiel, Box 733, Gladewater, 1 G.
G. O. Kelly & Shoveline Oil Co., Mount Pleasant and Overton, 2 R.
Kenwood Oil Co., McAlester, Okla., 4 R.
E. E. Kerr, 2025 Albans Rd., Houston, 1 R.
L. B. Ketch, Oklahoma City, Okla., 1 S.
Kewanee Oil & Gas Co., Titusville, Pa., 17 G.
Hobert Key, Kilgore, 1 G.
H. P. Key, et al, Box 443, Kilgore, 2 G.
Kidney & Lester, 3452 Stanford Ave., Dallas, 1 G.
Kilgore & Hanson, Longview, 2 G.
Kilgore Refg. Co., Overton, 1 G.
Killam & Gibbs, 1 R.
S. H. Killingsworth, 4 G.
Kimball & Baldwin, Wichita Falls, 1 G.
Kimbrell & Acre, Wichita Falls, 2 R.
A. D. King, Tr., Ricou-Brewster Bldg., Shreveport, La., 3 G.
C. King & Dyck Oil Co., Wichita Falls, 2 R.
F. King, Box 1294, Kilgore, 4 R.
King & Massengill, Box 1235, Wichita Falls, 3 G.
Kingwood Oil Co., Okmulgee, Okla., 1 G.
Kinnebrew & Simpson, Shreveport, La., 2 G.
Kirby Petroleum Co., Kirby Bldg., Houston, 15 R.
Charles J. Kleiner, Cisco, 1 R, 3 U.
Kniverton Oil Co., 2 G.
W. C. Knox, Kilgore, 2 G.
Koberg, et al, Oklahoma City, Okla., 1 G.
Koberg Oil Co., Oklahoma City, Okla., 3 G.
C. F. Kolp, Electra, 4 R.
K. O. T. Oil Co., Arp, 7 S.
K. & P. Oil Co., Tyler, 5 R.

L

Lacey Petroleum Co., Longview, 3 G.
R. Lacey, Longview, 6 G.
Roger Lacy (Dale Sneed), Longview, 1 G.
S. S. Laird, Kilgore, 4 R.
Lambert & Haynes, 2 G.
Lander, A. N., Kilgore, 1 G.
Sid Latham (Rec.), 3 G.
Wayne S. Lawrence, Longview, 1 R.
Lechner & Hubbard, Dallas, 7 G.
Lee & Lee, Box 315, Gladewater.
T. N. Lee, Gladewater, 1 G.
T. W. & S. A. Lee, Gladewater, 2 G.
Lee & Hankamer, Gladewater, 1 G.
Lee & Phillips, Gladewater, 3 G.
H. H. LeMaster, Tyler, 1 S.
Leonard Petroleum Co., Washington, Pa., 6 R, 3 G.
Lester & Duffield, Dallas, 7 U, 3 G.
Lewis Pet. Co., & Selby Oil Co., Tulsa, Okla., and Dallas, 14 R.
S. Lewis & Suni, Oklahoma City, Okla., 1 S.
S. Lewis & Fee, Oklahoma City, Okla., 2 S.
Lewis & Breeden, Oklahoma City, Okla., 1 S.
Lidie & Rowe, Inc., Giddens-Lane Bldg., Shreveport, La., 4 R.
Lide Taylor Oil Co., Giddens-Lane Bldg., Shreveport, La., 4 R.
J. Lieber, Tr., Zeppa, Jr., 2 G.
J. T. Life, 1 G.
Lion Oil & Refg. Co., Exchange Bldg., El Dorado, Ark., 22 R, 5 G.
R. C. Lipscomb, Tyler, 1 R.
T. C. Little, Longview, 3 G.
Little Caesar Oil Co., Longview, 1 R.
Lively & Bryan (J. C. Hamil, Rec.), Fort Worth, 2 R.
D. A. Lloyd, Franklin E. Wolfe, Rec., Fort Worth, 1 R.
Lockhart, Gladewater, 1 G.
Londo Oil Co., Tyler, 3 R.
London Petroleum Co., Tyler, 1 G, 1 S, 4 R.
Lone Pine Oil Co., Ontario, Canada, 3 R.
Lone Star Oil Co., Dallas, 1 G.
F. M. Long, Henderson, 2 S.
Joe Long (J. C. Robbins), Cushing, Okla., 1 U.
Louisiana Oil & Refg. Co., Ardis Bldg., Shreveport, La., 6 G, 14 R.
J. E. Lucas, Kilgore, 1 S.
Lucas & Hobbs, Tyler, 2 S.
F. Lacey (Rec.), Longview, 4 G.
Lucey Pet. Co., Tower Petroleum Bldg., Dallas, 22 G, 10 R.
Lucky Strike Royalty Co., Tyler, 1 G.
Luling Oil & Gas Co., Central Trust Bldg., San Antonio, 9 R.
Lutcher Oil Co., Shreveport, La., 1 R.
J. W. Luttes, 402 Franklin Bldg., Oklahoma City, Okla., 2 G.
C. H. Lyons, Shreveport, La., 6 R, 4 G.

Mc

T. P. McAdams (Rec.), 1 G.
L. C. McBride, Dallas, 1 G, 1 R.
J. A. McCartney (Indian Oil Syndicate), Box 451, San Angelo, 1 R.
W. M. McConnell (Sam Key), Tyler, 1 G.
A. McClelland (Rec.), 1 U.
McCullough Oil Co., Tyler, 2 S, 3 G.
McCullough & Zilky, Tyler, 1 G.
Alex McCutcheon, Arp, 6 S, 1 R.
McCutcheon & Sessions, 2 S.
McDaniel & Plummer, Gulf Bldg., Houston, 1 R.
C. C. McDonald (Rec.), 1 R.
McDonald & Campbell, Amer. Exch. Nat'l. Bank Bldg., Dallas, 4 G.
McDonald & Smith, Box 87, Electra, 1 R.
H. W. McGee, Dallas, 3 G.
J. B. McIntire (Trustee), Tyler and Kilgore, 1 R.
McLemore & Reagan, 1 G.
McLester Oil Co., Eastland, 1 R.
McMahon, Moore & McCullough, 6 S.
Charles McMahon, Tulsa, Okla., 10 R, 2 G.
C. L. McMahon, et al, Tulsa, Okla., 1 G.
McMahon & British Am., Tulsa, Okla., 4 R.
McMillan, Gordon (Agent), Tyler, 2 G.
Gordon McMillan (Trustee), Tyler, 2 R.
McMillan Pet. Corp. & McMurray, Tyler, 3 G.
Jim McMurray, Judia Bldg., Cisco, 4 G.
McMurray Bros., Arp, 5 R.
M. H. McMurray, Arp, 5 R.
R. J. McMurray (Rec.), Arp, 3 R.
R. J. McMurray (Trustee), Arp, 2 S.
J. J. McRoberts, Henderson, 1 R.
J. J. McRoberts (Reilly & McR.), Henderson, 2 R.
M. H. McVey, 1 G.
W. M. McVey, 1 G.
McVey & Aldhal (Mary Stevens), 1 G.
McMurray & Fair, Tyler, 3 R.
McWhorter, 2 G.

M

Mabee Consolidated Corp., Exchange Bank Bldg., Tulsa, Okla., 12 R, 8 G, 4 U-G.
E. B. Madden, Olney, 1 R.
Maddox Dev. Co., Pittsburg, 1 U.
Magnolia Pet. Co., Magnolia Bldg., Dallas, 51 U, 292 G, 89 R, 20 S, 7 G-R, 9 G-U.
C. L. Mahoney, Dallas, 1 G.
Mahoney Pet. Co., Dallas, 1 G.
Manahan Oil & Gas Co., Tulsa, Okla. (Kilgore), 6 R, 1 S.
Malernee, et al, Oklahoma City, Okla., 4 R.
Manson Oil Co., Chickasha, Okla., 3 G, 5 U.
Bobby Manziel, Gladewater, 4 G, 1 U.
Joe Manziel, Gladewater, 2 G.
Marfinwood Oil Co., Corsicana, 1 G.
Margay Oil Co., Roberts Bldg., Tulsa, Okla., 8 G, 6 U.
Marine Corp., Central Bank Bldg., Dallas, 5 R, 2 G.
Marine Prod. Corp., 9 G.
Markham & Dunning, Fort Worth, 4 R.
Mar La Foy Oil Co., Tyler, 2 G.
Marlin Oil Syndicate, Longview, 1 G.
Marr Drilling Co., Tyler, 2 R.
Roy L. Martin, Tyler, 1 G.
F. W. Martin & Co., Exchange Bldg., Tulsa, Okla., 2 G.
Martin & Cockburn, Overton, 4 R.
Martin & Sladik, Tyler, 2 R.
J. H. Massie, Staley Bldg., Wichita Falls, 9 G.
J. H. Massie et al, Staley Bldg., Wichita Falls, 6 G.
Otto Massie, 2 G.
Massie & McMimm, 1 G.
W. H. Matthews, Orpheum Bldg., Wichita, Kans., 2 G.
Mazda Oil Co., Commercial Bldg., Tulsa, Okla., 8 G.
Mead Bros., Atlas Life Bldg., Tulsa, Okla., 2 U.
Mead Oil Co., Tulsa, Okla., 4 G.
J. C. Means, Jr., 5 G.
Meebane Oil Co., 1 R.
J. W. Meeker (rec.), 1 R.
J. G. Menke, 1 R.
Mercury Pet. Corp., Fort Worth, 2 G.
Meridian Pet. Corp. of Texas, Tulsa, Okla., 6 G.
Merren & Mays, Shreveport, La., 4 G.
Merrick et al, Ardmore, Okla., 5 R.
F. W. Merrick, Inc., Ardmore, Okla., 8 G.
Merry Bros. & Perini, Inc., San Angelo, 1 G, 3 R.
Metcalf et al, 1 R.
Midas Oil Co., Dallas, 6 G, 2 U.
Midfield Oil Co., 2 G.
Mid-Kansas Oil & Gas Co., Findlay, Ohio, and Tulsa, Okla., 253 R, 27 S, 9 C.
Mid-Texas Prod. Co., Breckenridge, 1 C.
E. L. Miller et al, 1 G.
Paul L. Miller, Kilgore, 2 G.
Miller-Lacy Oil Co., Shreveport, La., 1 G.
Minnesota-East Texas Oil Co., Duluth, Minn., 1 G.
Mission Oil Co., Land Bank Bldg., Kansas City, Mo., 7 G.
G. P. Mitcham, Dallas, 5 U, 3 G.
C. B. Mitchell, Fort Worth, 1 R.
Molly Oil Co., 1 G.
Robt. S. Monroe, Jr., Tyler, 2 S.
Mook-Texas Oil Co., Fort Worth, 3 G.
B. W. Moore, 818 Citizens Bank Bldg., Tyler, 1 G.
E. H. Moore, Tulsa, Okla., 3 R.
E. J. Moran, Dallas, 2 G.
J. J. Moran, Staley Bldg., Wichita Falls, Tex., 1 G.
P. M. Morgan (Rec.), 1 R.
A. D. Morton et al, Exchange Bank Bldg., Tulsa, Okla., 1 G.
H. S. Moss, First Nat'l. Bank Bldg., Dallas, 9 G.
Moss & Urshell, First Nat'l. Bank Bldg., Dallas, 9 R.
Mudge Oil Co., Branch 609 Sycamore St., Duncan, Okla., 2 U, 16 G.
Mullendore, Berry & Berry, Cleveland, Okla., 7 G.
L. R. Munger, 5 R, 7 G.
M. J. Munn, 2 R, 6 G.
Munn, Skelly & Buford, 2 G.
J. B. Murphy, Sapulpa, Okla., 1 G.
O. G. Murphy (Trustee), El Dorado, Ark., 6 G.
J. C. Murphy, 1 R.
Murphy et al, 3 U.
Murphy & Lanier, Marshall, 1 G.
C. H. Murray, 1 G.
Murray Oil Co., Overton, 2 R.
Murray & Goode, Overton, 5 R.

N

Nash & Strickland, Henderson, 3 G., 2 S.
Nathan Oil Co., 1 R.
National Oil & Grease Co., Dallas, 3 G, 2 R.
National Oil Co., San Antonio, 1 G.
National Securities Co., Dallas, 3 G.
Navarro Oil Co., Humble Bldg., Houston, 16 R, 16 G.
Nelson & Decker, 1 U.
New Process Producing Co., Dallas, 4 G.
R. M. Nichols, 1 G.
Nivola Oil Co., Tyler, 2 R.
North Star Oil Co., Tower Petroleum Bldg., Dallas, 1 R.

O

O'Brien Oil Co., 3 G.
O'Connell Oil Co., Boston, Mass., 1 G.
John F. O'Connell, 1 G.
Octagon Oil Co., Tulsa, Okla., and Kilgore, 4 G.
T. L. Odom, Tyler, 1 R.
R. Ogden, 511 W. Seventh St., Austin, 2 R.
J. J. O'Hearn, 1020 W. Mistletoe, San Antonio, 3 R.
Oils, Inc., Tradesmen's Nat'l. Bank Bldg., Oklahoma City, Okla., 2 G.
Oils Properties Corp., Houston, 1 R.
J. N. Okseholt Co., 3 R.
J. E. Oliver, 1 R.
Olsen Bros., Henderson, 12 R.
Olvey & Sample, El Dorado, Ark., 5 R, 1 G.
Omega Oil Co., Longview, 2 G.
I. P. O'Neill, Tyler, 2 R.
John O'Neill, Staley Bldg., Wichita Falls, 2 G.
John T. O'Neill, 2 G.
Edna G. Onyeatt, 1 G.
Oriental Oil Co., 1911½ Pacific St., Dallas, 2 G.
Ortiz Oil Co., Wichita Falls, 17 R, 2 G.
O. W. R. Oil Co., Dallas, 4 G.
Overton Refining Co., Inc., Overton, 3 R.

P

Geo. Pace et al, Republic Bank Bldg., Dallas, 1 R.
Glenn A. Pace, 1 R.
H. A. Pace, 1 R.
Pace Petroleum Co., Oklahoma City, Okla., 2 S, 2 G.
Panhandle Ref. Co., Wichita Falls, Tex., 1 R.
Pansy Oil Co., Tyler, 5 R.
Patrick Prod. Co., 304 Central Bank Bldg., Dallas, 1 G.
Patterson Drilling Co., Dallas, 3 R.
T. G. Patton, Blackstone Hotel, Tyler, 1 R.
J. B. Patty, 1 G.
E. A. Payne, 1 G, 1 R.
Pearce & Moon, Kilgore, 1 R, 2 G.
V. J. Pearson, Longview, 2 G.
Peckham et al, City Bank Bldg., Wichita Falls, 5 U, 10 G.
Pederson & Merrett, 3 G.
Pelican Nat'l Gas Co., Commercial Bank Bldg., Shreveport, La., 7 G.
Pelphery Bros. & Hobson 2 G.
Penn Oil Co., Dallas, 2 R.
Perkins & Hines, Wichita Falls, 1 G.
R. W. Perkins, Marshall, 2 G.
O. J. Perrin & Fell, Dallas, 2 G, 7 U.
E. F. Perry, 1 G, 1 S, 1 R.
J. P. Perry et al, 1 R.
Perry, Wood & Boller, 5 R.
Petroleum Finance Co., Dallas, 13 G.
Petroleum Marketing Co., Houston, 9 R.
Peyton Bros., Mexia, 3 G.
Phillips & Bennett, Mexia, 1 R.
Phillips et al, Gladewater, 6 G, 3 U.
Joyce Phillips, Rec., 1 G.
Philmack Oil Co., Tyler, 2 R.
C. D. Pierce, Trustee, 1 S.
Pilot Oil Co., 734 Fidelity Union Bank Bldg., Dallas, 23 G, 7 R.
Pine Grove Oil Co., Houston, 3 S.
Pine Lodge Oil Co., Houston, 1 U.
Geo. D. Pipes, 2 R.
Pitkin & Goldston Oil Co., Houston, 3 G.
Pitzer, West & Wood, Breckenridge, 1 R.
Pitzer & West, Breckenridge, 2 S.
Albert Plummer, Houston, 4 G.
Pointer Oil Co., Inc., Waco, 2 S.
Porter & Baggett, Longview, 1 G.
Powell & Irion, Inc., Gladewater, 3 G.
Premier Oil Corp., Tyler, 2 G.
L. G. Priest, 1905 Fifth Ave., Fort Worth, 4 R.
Prince Bros. Drilling Co., Electra, 6 G.
J. C. Prince, Jackson, Miss., 2 R.
L. H. Pritchard, Oklahoma City, Okla., 1 R.
P. G. Prod. Co., 1 G.
Producers, Inc., 7 G.
Professional Oil Co., Waco, 2 S.
Nelson Pruitt, Box 114, Waxahatchie, 2 S.
Pugh-Hickman Drilling Co., Inc., Shreveport, La., 5 S.
Pyramid Pet. Corp., Dallas, 2 R.

Q

Quad Oil Co., Dallas, 3 G.

R

Raddatz, E. J., Longview, 6 G.
Rajo Oil Corp., Fort Worth, 9 G, 1 R.
Rancho Oil Co., Sinclair Bldg., Fort Worth, 5 G, 15 U.
W. S. Randall, Tyler, 1 R, 1 G.
M. W. Ransom, Trustee, Shreveport, La., 1 R.
Ray & Miller, Longview, 3 G.
Geo. B. Ray, Tyler, 10 R.
J. G. Reeves, 222½ N. Broadway, Tyler, 2 G.
Hill Read, 2 R.
Rector & Davidson, Corsicana, 1 R.
Red Grave & Fagan, 1 G.
Red Star Oil Co., McAlester, Okla., 10 G.
Reddic & Hugus Oil Co., Tyler, 2 G.
S. Reele (Rec.), 1205 Mercantile Bldg., Dallas, 1 R.
Reese & Wright, 1 G.
J. C. Reese, 1 G.
Refugio Oil Co., Houston, 2 G.
Refugio Oil and J. Z. Werby, 3 U.
Regent Oil Co., Dallas, 3 R, 1 G.
Reilly Oil & Royalty Co., San Antonio, 5 G.
Reilly, Trapshooter, San Antonio, 3 R.
Reinhardt & Bates, 1 G.
A. D. Repp, 1 G.
Republic Production Co., Houston, 4 R, 4 G.
Reserve Petroleum Co., Tulsa, Okla., 11 G.
Retail Drilling Co., Henderson, 3 R.
J. D. Reynolds et al & Conner, Camden, Ark., 1 U, 1 G.
Roy A. Reynolds, Fort Worth, 6 G, 1 U, 2 R.
W. F. Reynolds, Tr., 3 R.
Reynolds & Kimberlin, 1 G.
Rhoades Drilling Co., Inc., Trinity Life Bldg., Fort Worth, 34 G, 2 R.
Rice Drilling Co., 1603 Slattery Bldg., Shreveport, La., 2 G.
Richardson, Tyler, 1 R.
Rife Construction Co., 2 R.
Rimmer, Lutters & Hamilton, Longview, 1 G.
Rio Oil Co., Fort Worth, Tex., 6 U.
M. Risinger, 1 R.
Roane Petroleum Co., Dallas, 2 G.
J. W. Robbins, Trustee, Longview, 4 R.
D. C. Roberts, Henderson, 3 R.
Roberts Oil Co., 1 R.
Roberts Oil Corp., Breckenridge, 1 R, 1 S.
J. I. Roberts Prod. Co., Longview, 1 G, 3 U.
L. E. Roberts, Henderson, 3 R.
M. E. Roberts, 1 R.
Roberts & Roscoe, Henderson, 1 R.
Robertson Drilling Co., Fort Worth Nat'l. Bank Bldg., Fort Worth, 1 R.
A. D. Robinson, Dallas, 5 G.
R. C. Rochelle et al, Dallas, 1 G.
Rochester-Haddaway, 2 G.
Rockwood Oil Co., McAlester, Okla., 1 G.
Rocky Mountain Oil Co., Box 863, Longview, 2 S.
Roeser & Pendleton, Inc., Fort Worth Club Bldg., Fort Worth, Tex., 36 G, 1 U.
D. D. Rogers, Dallas, 1 R.
G. B. Rogers, Rec., Waco.
R. H. Rogers, Oklahoma City, Okla., 2 R.
Yandell Rogers, Tyler, 4 R.
Rogers Bros., 1 R.
Rogers & Rogers (or Champlin & Bass), Dallas, 5 U.
Root & Rhodes, Eastland, 2 G.
Root & Mahon, 1 G.
A. E. Roscoe, Marshall, 1 R.
Rowan & Bristow, 4 G.
Rowan & Hope, San Antonio, 1 G.
Rowan & Nichols, Inc., Trinity Life Bldg., Fort Worth, 4 G.
Max Ruben, 3217 Main St., Dallas, 1 R.
Ruben & Boren, 2 R.
Ruben & Nadel, 2 R.
Ruben & Wiseman, 3 R.
Frank Russell, 1 R.
Russ Petroleum Corp., Dallas, 8 G.
Ruston Drilling Co., Ruston, La., 11 G.
J. S. Rushing, 3 G, 2 R.

S

Sabine Syndicate, Longview, 3 R.
Sabinas Oil Corp., Longview, 2 G, 11 U, 3 G-U.
Sakaba Oil Corp., Inc., Shreveport, La., 3 G.
Salmon Oil Co., Dallas, 3 G.
Salome-Cooper Drilling Co., 6 U.
H. G. Samson, Sinclair Bldg., Fort Worth, 4 R.
Sanard Oil Co., Swann Bldg., Tyler, 1 G.
J. Curtis Sanford, 1 R.
J. L. Sarver, Tyler, 1 G.
Satelite Oil Co., Tulsa, Okla., 2 G.
Saturn Oil Co. 1 U.
Sayre Oil Co., Glencoe, Ill., 4 R.
T. S. Schroeder, Dallas, 3 G, 1 R.
Scott & Lipscomb, 1 G.
Sea Gull Oil Corp., Tyler, 1 R.
Seigler & McCall, 4 G.
Selby Oil & Gas Co., Kennedy Bldg., Tulsa, Okla., 15 G.
Snavely Heris and Amy Miller, 32 G.
Sells Petroleum Co., Inc., Longview, 10 G.
Sentinel Oil Corp. (E. Tex. Loan & Inv. Co.), Dallas, 1 S.
Service Drilling & Royalty Corp., 3 U.
W. L. and T. L. Session, Dallas, 3 S.
J. W. Sewell, 1 S.
Shano Oil Co., Longview, 4 U, 6 G.
Shasta Oil Co., Longview, 5 R, 9 G.
W. M. Shaw, 1 R.
Shaw Oil Co. (Union Oil Co.), Dallas, 3 R.
Sam P. Shelburn, 5 G.
Shell Petroleum Co., Tulsa, Okla., and Houston, 275 G, 44 R, 15 U, 3 G-U.
Carl Sheldon, Electra, 1 G.
Shilo Oil Co., Dallas, 1 G.
Shore Line Oil Co., Overton, 2 R.
Showalter & Russell, Longview, 1 G.
Showers & Moncrief, Inc., Houston, 8 G.
W. M. Shriver & Johnson, Longview, 2 U.
Harry Shulman, Box 1058, Breckenridge, 1 G.
Louis Sikes, Tyler, 2 U, 6 G.
Silver Star Oil Co., McAlester, Okla., 7 G.
R. E. L. Silvey, Overton, 2 R.
D. J. Simmons (Jackson & Jackson), Fort Worth, 1 G.
Jay Simmons, Dallas, 2 G.
Simms Oil Co., Magnolia Bldg., Dallas, 36 U, 15 G.
Simms Oil Co. and Leon Rusa, Dallas, 12 U.
Simplex Oil Co., Shreveport, La., 3 G.
Sinclair-Prairie Oil Co., Tulsa, Okla., and Fort Worth, 242 G, 123 R, 119 S.
J. L. Skaggs, 1 G.
Skipper-Bivins Oil Co., Inc., Longview, 2 G.
B. A. Skipper Prod. Co., Longview, 11 G.
Skipper Oil Co., Longview, 1 G.
A. L. Slaughter (receiver), Dallas, 1 S, 2 G.
C. F. Smith, Longview, 2 G.
E. L. Smith Oil Co., Mexia, 15 G, 2 R, 1 G-U.
E. R. Smith (receiver), 1 R.
Glenn J. Smith, Thompson Bldg., Tulsa, Okla., 1 G.
H. R. Smith, Inc., Luling, 13 G.
H. T. Smith & Sons 1 S.
J. R. Smith, Longview, 3 G.
James T. Smith, Tyler, 1 G, 2 R.
J. W. Smith (receiver), Electric Bldg., Houston, 1 S.
J. O. Smith et al, 1242 Pacific Mutual Bldg., Los Angeles, Calif., 2 R.
R. E. Smith, Jr., 3124 Albans, Houston, 1 G.
R. E. Smith, (receiver), Tyler, 1 G.
Smith-Bohlesson Oil Co., Houston, 2 R.
Smith Oil & Gas Co., Longview, 3 S, 1 G.
Smith, Guerin & King, Tyler, 4 S.
Smith & Strouss, Dallas, 1 G.
Smith & Torrance, 5044 Bonner St., Tyler, 4 R.
Sneed Bros. and Y Oil Co., Tulsa, Okla., 2 G.
Sneed-Dale, 2 G.
J. B. Sneed, 1 S.
Snowden & McSweeney, Sinclair Bldg., Fort Worth, 12 R, 2 G-U.
B. L. Snyder, 4308 Edmondson Ave., Dallas, 1 R.
W. O. Snyder, Box 7027, Tyler, 1 G.
Marcus Snyder (T. A. Johnson, Trustee), 1 R.
Snyder & Ashton, 1 G.
Son Bar Corp., El Dorado, Ark., 6 R.
Son Ron Oil Co., Fair Bldg., Fort Worth, 3 R.
Sorrels & Owens, Gilmer, 1 U.
V. Sorrel (Pilot), 1 G.
Southern Interstate, Henderson, 3 R.
Southern Prod. Co., Minneapolis, Minn., 2 R.
Southern Oil Ref. Co., Box 967, Tyler, 2 R.
Southport Pet. Co., Longview, 2 G.
Sovereign Oil Corp., 609 S. Grand Ave., Los Angeles, Calif., 1 G, 1 R.
J. B. Sowell, 2 G.
M. Spalding, 1 G.
Spondsco Oil & Royalty Co., Dallas, 7 R, 1 C.
H. K. Spear, Kilgore, 1 G.
F. D. Spratt, et al, Gladewater, 1 G.
J. E. Stack, 1 G.
Staley Bros., Staley Bldg., Wichita Falls, Tex., 1 G.
Staley-Wynne Oil Corp., Wichita Falls, 1 G, 1 R.
Standard Oil of Kansas, Houston, 6 G, 8 R, 5 S.
Standard Pipe & Supply Co., Dallas, 4 R.
Standtex Pet. Co., Oklahoma City, Okla., 2 R.
Stanolind Oil & Gas Co., Fort Worth, 138 R, 87 G, 16 U, 13 G-U, 7 G-R.
C. R. Starnes et al, Gladewater, 2 G.
W. L. Starnes, 1 R.
Star Petroleum Co., 1121 Rives-Strong Bldg., Los Angeles, Calif., 3 G.
State Prod. Co., Eastland, 1 R.
Cecil Story (receiver), 1 G.
Strickland & Mullins, Henderson, Tex., 1 R.
Stroube & Stroube, Corsicana, 13 G, 8 R, 5 U.
Steen Drilling Co., Tyler, 7 G, 3 G-U.
H. Stein, Overton, 1 R.
W. E. Stewart, 1 R.
J. M. Stevens (receiver), (now Midfield Oil Co.), 2 R.
Stewart & Duffy, Overton, 2 R.
Stewart Holdings, Inc., Tyler, 3 S.
Stidham & Thrasher, Tyler, 1 R.
R. J. St. Germaine, Wright Bldg., Tulsa, Okla., 2 G.
Stoddard & DeLaney, Dallas, 4 G, 3 R.
Stodel Oil Co., Dallas, 3 G.
Jerome Stone, Hamilton Bldg., Wichita Falls, 1 R.
Stone & Imperator Oil Co., Dallas, 1 R.
Fred Stovall, Trustee, 1 G.
S. & D. Oil Co., 3 R.
S. & W. Oil Co., Dallas, 3 R.
Sullivan & Burch, Overton, 1 R.
M. Joe Sullivan, Kansas City, Mo., 1 R.
Summit Drilling Co., Tulsa, Okla., 9 S.
Sun Oil Co., Dallas, 177 G, 53 S, 43 R, 22 U, 14 R-S, 10 G, 5 G-U.
Sunbeam Oil Co., Oklahoma City, Okla., 2 R.
Superior Oil Co., Dallas, 35 G.
Sutton & Hawkins, Tyler, 2 S, 5 G.
Swain & Holcomb, 1 G.

T

C. P. Talbot, Shreveport, La., 1 R.
A. H. Tarver, Shreveport, La., 1 G.
Terver, Randall & Delaney, 2 U.
Tatum, Oliver & Spradin, Dallas, 2 R.
Taubert & McKee, Tyler, 2 R, 1 S.
Taxman Refining Co., Wichita Falls, 1 U.
R. L. Tennant (receiver), 3 R.
Texarkana Oil Co., Arp, 6 R.
Texon Oil & Royalty Co., Fort Worth, 1 G.
Tex-Jersey Oil Corp., Tyler, 7 R.
Texas State Oil Co., 703 Browder St., Dallas, 4 R.
Texas Trading Co., Tyler, 3 R.
Texas Unity Oil Co., Houston, 1 G.
Tex Lloyd, Fort Worth, 1 R.
Texnia Oil Co., Wichita Falls, 3 U.
Texota Oil Corp., El Dorado, Ark., 2 G.
Texas Co., Houston, 100 G, 71 R, 26 S, 8 C, 3 U.
Sam Thomas, Trustee, Marshall, 2 G.
Thomas & Sedberry, 2 G.
E. Thomasson, San Antonio, 1 S, 1 R.
Thomasson & Fitzsimmons, Shreveport, La., 1 R.
F. L. Thompson, 2 R.
Mrs. E. Thompson, 4 G.
Thompson & Bean, Groesbeck, 1 R.
Tide Water Oil Co., Tulsa, Okla., 200 G, 115 R, 7 G-R.
Tidal Oil Co., Box 965, Longview, 2 G.
M. K. Towns, Luling, 3 G.
Transtate Oil Co., 2602 Esperson Bldg., Houston, 6 G.
M. E. Trapp, Oklahoma City, Okla., 2 G.
Travis & Wair, 1 U-G.
Trico Oil Co., Dallas, 3 U, 5 R.
Chas. Triger (receiver), Abernathy, Longview, 1 G.
C. L. Tubbs, Box 282, Arp, 1 C.
W. B. Tucker, Dallas, 4 R.
Tucker & Killough, 1 G.
W. G. Tunstill et al, Petroleum Bldg., Fort Worth, 1 R.
Turman Oil Co., Tulsa, Okla., 32 R.
W. C. Turnbow (Trustee), 103 Hurst Bldg., Longview, 1 R, 10 G.
W. F. Turner, Ardmore, Okla., 6 G.
Turner & Gandy, Iowa Park, 1 G.
Twin Oil Co., Gladewater, 6 U-G, 2 U.
Tysco Oil Co. (Yeager-Henry-Etex L. & I. Co.), Dallas, 2 R, 3 G.

U

Union Oil Co., Union Oil Bldg., Los Angeles, Calif., 6 R.
Universal Oil & Gas Co., Shreveport, La., 2 G, 1 R.
Upchurch & Co., Tyler, 2 R.
Uscan Oil Co., Oklahoma City, Okla., 1 G, 3 R.
Utex Oil Co., Salt Lake City, Utah, 3 G.

V

Ed Valentine, Kilgore, 1 G.
G. H. Vaughn et al, Dallas, 14 R.
Venable & McClanahan, 16 R.
Ventura Oil Co., Wichita Falls, 1 R.
J. C. Vernon, Gladewater, 1 G.
R. W. Vierson, 5 G.
Sam K. Vierson, Okmulgee, Okla., 6 R.
Vireca Oil Corp, Houston, 1 G.
Virginia Oil & Royalty Co., Fort Worth, 3 G.
R. H. Vise, Dennison, 2 G, 2 U, 1 R.
Mrs. R. H. Vise, 3 G.

W

Waggoner & McConnell (agent), 1 G, 3 U.
Wainwright-West Oils, Ltd., Henderson, 3 R, 2 G.
E. L. Walker, Mrs., Gladewater, 1 G.
F. Walker, 1 R.
R. Y. Walker, 1 G.
W. D. Walton et al, Pettus, 3 R.
Walton & Tuberville, Henderson, 1 R.
Ward Oil Corp., Ardmore, 39 R.
Washington Oil Co., 323 Fourth Ave., Pittsburgh, Pa., 4 G.
Weaver-Crim Corp., Eastland and Kilgore, 5 R, 14 G, 4 S.
S. P. Weaver, 4 S.
Webster Oil & Gas Co., Box 920, Tyler, 2 G.
F. W. Weeks et al, Tyler, 3 R.
H. M. Welch, 610 Kirby Bldg., Dallas, 1 R.
Welch-Sandler Oil Co., Kansas City, Mo., 4 G.
Welch-Sandler & Demayo, 1311 E. 19th St., Kansas City, Mo., 2 G.
WoMac Pet. Co., Tyler and Wichita Falls, 1 R.
Wells & Gann, Tyler, 7 G.
L. H. Wentz, Ponca City, Okla., 2 G.
J. G. Werby, Longview, 2 G, 1 U.
C. K. West, Breckenridge, 4 S.
West Florida Oil Co., Atmore, Ala., 1 R.
Western States Royalty Co., Chicago, Ill., 3 G.
Western States Oil & Ref. Co., Fort Worth, 2 R.
Westheimer & Daube, Ardmore, Okla., 9 R.
Westline Oil Co., Tyler, 2 R.
Whale Oil Corp., Corsicana, 2 G.
W. W. Wheeler et al, Wirt M. Marres, receiver, Fort Worth, 2 U.
J. S. Wheelis, Jr., San Antonio, 6 S.
Wheelock & Collins, 1st Natl. Bank Bldg., Corsicana, 6 G, 13 R.
J. O. Whittington, Longview, 11 G.
Whitley Purchasing Co., 2 R.
C. L. Wickliffe, Longview, 1 U.
P. N. Wiggins, Jr., Magnolia Bldg., Dallas, 2 G.
Wilcox Oil & Gas Co., Tulsa, 1 G.
Wilder & Howse, Tyler, 2 R.
Carl G. Wilie, Overton, 3 R.
P. A. Wilkerson, 2 R.
Willard Oil Co., Cleburne, 2 R.
Douglas Williams, Dallas, 1 G.
H. E. Williams, 2 G.
Wilson & Wimberly, 1 G.
Wilford Co., Inc., Shreveport, La., 1 S.
Wilson & Broach, Beaumont, 2 R.
Wimmer & Landers, 1 G.
Winona Oil Co., Winona, Minn., 1 G.
Winston Oil Co., McAlester, Okla., 7 G.
Wise & Jackson, Sapulpa, Okla., 1 G.
Nat Wiseman et al, Tyler, 2 R.
Nat Wiseman, Tyler, 2 R.
Witherspoon Oil Co., San Antonio, 3 R, 1 S.
K. W. P. Witt, Overton, 1 R.
Wofford Oil Co., Birmingham, Ala., 7 R.
R. A. Wolfe, Houston, 3 G.
Clint Wood Drilling Co., Inc., Breckenridge, 4 R.
Clint Wood, 2 G.
J. A. Wood and Saloma & Cooper, Wichita, Kans., 10 U-G.
Fox Wood, Oklahoma City, Okla., 2 G, 1 U.
Woodley Petroleum Co., Shreveport, La., 3 G.
Wooley Pet. Co., 3 G, 13 R.
H. E. Wren, 1 G.
Wright-Smith Oil Co., Ardmore, Okla., 2 G.
R. E. Wyche, Jr., Shreveport, La., 1 R.

Y

Young Bros. & Alexander, Inc., Fort Worth Natl. Bank Bldg., Fort Worth, 1 U.
Yount Lee, Oil Co., Beaumont, 184 G.

Z

Zenith Oil Co., Ltd., 435 Subway Terminal Bldg., Los Angeles, Calif., 3 G.
Zion Oil Co., 1323 Union Ave., Kansas City, Mo., and Dallas, 3 S.

Stationary-Spindle Design for Oilbath Geared Powers Suitable for East Texas Conditions

By KENTON CHICKERING
Oil Well Supply Co., Dallas, Tex.

With fully enclosed, heavy-duty, geared type powers rapidly growing in popularity in several Mid-Continent oil fields, it is interesting to note the development of the stationary-spindle design used in the construction of the first heavy-duty, oilbath, double-reduction geared power. Although the latest power of this design is rated for nearly twice the capacity of the original stationary-spindle type oilbath geared power, it is of the same general construction and has been thoroughly field proven.

More than two years ago the first heavy-duty, oilbath, double-reduction geared power for pumping a group of deep wells was designed and built by the Oil Well Supply Co.

The stationary-spindle type power differs from other types in that the spindle is an integral part of the base. The main gear and the eccentrics or crank, as the case may be, revolve as a unit around the stationary spindle. This has several advantages that are interesting and worthy of mention here.

The radial load from the main gear and crank (or eccentrics) is supported by the base through the spindle which is an integral part of it. Both the upper and lower radial thrust bearings are mounted on the stationary spindle. This feature eliminates the necessity of a radial bearing.

Especially Desirable Construction

The stationary-spindle design affords positive alignment of the bearings and gears. The spindle is an integral part of the base and can not get out of alignment. The bearings are definitely located on the spindle. This construction is especially desirable when dismantling and reassembling a power in the field. All parts are easily removed and replaced without the least danger of misalignment.

The stationary-spindle design permits of the distribution of the maximum tooth wear over several areas on the low-speed gear. The crank (or eccentrics) is held to the main gear by several large bolts and is driven by large radial keys placed on a wide radius. The position of the crank (or eccentrics) on the main gear can be changed to distribute the maximum gear wear resulting from high peak loads over several areas of the low-speed gear train. The use of large radial keys eliminates danger of loose shaft keys.

One of the most desirable features made possible by the stationary-spindle design is compactness and the overall height is reduced to a minimum, and the pull rod connections are close to the foundation.

The reduced height of the full rod connections cuts down the installation costs. It is not necessary to set one of these powers in a deep pit, and less concrete is required in the foundation because the reduced height lessens the tendency to turn the unit over.

To make oilbath geared powers as compact as possible, the Oil Well Supply Co. has combined the use of fully heat-treated, forged steel gears with the stationary-spindle design. Gears of this type have a greater capacity per inch of face width and it is possible to use narrower gears. The narrower gears further reduce the height of the powers and make them more compact.

Eccentric and Crank Type Powers

Both eccentric type and crank type powers of the stationary-spindle design are manufactured by the Oil Well Supply Co. The different service requirements for oilbath geared powers in various fields make it desirable to build units of both types.

The crank type lends itself to all-roller-bearing construction and is particularly suitable for pumping a moderate number of deep wells. In order to make the crank type adaptable to various well conditions, this manufacturer has perfected and regularly furnishes the dual-stroke type single crank. It is a cast steel crank with two crank pin holes. The crank pin is placed in one hole for a stroke of a certain length and in the other for a different stroke length.

The eccentric type, which can be provided with one or two eccentrics, is best suited for pumping a larger number of relatively shallow wells. Eccentrics are furnished to provide the stroke lengths specified by operators. The use of two eccentrics makes it possible to connect a very large number of wells and also facilitates proper balancing of well loads.

The two sizes of crank type oilbath geared powers now manufactured by the Oil Well Supply Co. are especially well suited to the requirements of the East Texas Field. The smaller of the two, the Imperial No. 80-SC, is an all-roller-bearing, single crank (dual-stroke) power recommended for the same horsepower input capacity as the Imperial No. 80 (eccentric type), the original heavy-duty oilbath, double-reduction geared power. The larger unit, the Imperial No. 150-SC, is an all-roller-bearing, single crank (dual-stroke) power for greater capacities.

The low-speed gears of the Imperial No. 80-SC (also the Imperial No. 80) have an industrial rating of 230 horsepower at 20 r.p.m. as calculated by the Lewis formula. In spite of this high industrial rating, the manufacturer very conservatively places the recommended horsepower input capacity for continuous oil field service at 80 horsepower at 20 s.p.m., or 115 horsepower at 30 s.p.m. in order to allow an ample factor of safety. It is customary in the East Texas Field to drive this power with a 100-horsepower gas or oil engine through a V-belt drive and a long high-speed shaft extension. It can be driven by an 80-horsepower electric motor, and the overall reduction of 27.7 to 1 has proven very satisfactory for service with various drives.

Based on an overall efficiency of 60 per cent from the prime mover to and including the working barrels, the No. 80-SC power will lift 1,800 bbls. of fluid per 24 hours from a 3,500-foot level when operating at 20 s.p.m.

Large Factor of Safety

The low-speed gears of the Imperial No. 150-SC have an industrial rating of 510 horsepower at 20 s.p.m. as calculated by the Lewis formula. The manufacturer rates this power for continuous oil field service at 150 horsepower input capacity at 20 s.p.m. thus assuring a large factor of safety. This unit is ordinarily driven by a 150 or 160-horsepower oil or gas engine through a V-belt drive and long high-speed shaft extension. It can be used with a 150-horsepower electric motor, and the overall reduction of 21.6 to 1 makes it suitable for various drives.

Assuming an overall efficiency of 60 per cent from the prime mover to and including the working barrels, the No. 150-SC power will lift 3,500 bbls. of fluid per 24-hour day from a level of 3,500 feet at 20 s.p.m.

Both of these new powers are equipped with dual-stroke cranks for 30-inch and 36-inch stroke lengths. The lubrication systems are foolproof. A positive splash system, in which no oil pump is required, furnishes ample lubrication to all gears and most of the bearings. The upper spindle bearing and the crank pin bearings are grease packed. The grease is retained by self-adjusting leather seal rings.

The pull rod discs used on both the No. 80-SC and the No. 150-SC powers have 16 clevis holes for pull rod connections. Each hole is equipped with a replaceable, hardened steel bushing so that no wear takes place on the disc. The clevis pins are drilled for alemite lubrication. The crank pin of each power is provided with two heavy-duty Timken bearings on which the disc is mounted.

Texas Revenues Grow With Drive Against Bootlegging

AUSTIN, Tex., July 24.—Comptroller George H. Sheppard's drive on gasoline bootleggers is bringing the State $4,000,000 a year of new revenue, half of it from the East Texas oil field region alone, according to a statement by W. O. Huggins, president of the Texas Good Roads Association.

That means, Mr. Huggins pointed out, $1,000,000 for the school fund, $1,000,000 for the highway bond assumption fund, and $2,000,000 for highway construction. The Texas Good Roads Association is cooperating in the drive to stop evasion in the payment of the gasoline tax.

By comparison, Mr. Huggins showed this new $2,000,000 in gasoline taxes in the East Texas area is greater than revenues of either the cigaret tax, all poll taxes, or all occupation and gross receipt taxes, or all inheritance taxes for last year. He pointed out that numerous indictments have been returned in South Texas against gasoline dealers charged with selling blended motor fuels. The prosecutions are under the new Metcalf-Harman gasoline tax administration law passed last spring. The charges were based on mixing low-grade tax-free fluids with gasoline.

WILLIAM H. H. MONROE DEAD

OIL CITY, Pa., July 24.—Funeral services for William Henry Harrison Monroe, 93, one of the best known oil men in western Pennsylvania, were conducted Friday, July 21. Mr. Monroe died in his home in Shamburg, near here, July 18. He came to Oil City in 1865 and followed the oil business his entire life, working in the Pithole and Petroleum Center areas during their heyday. He leaves three sons and one daughter, Charles C. Monroe of Corry, Pa.; Victor G. and Isaac E. Monroe of Pleasantville, Pa., and Miss Clara Monroe, at home. He also leaves 17 grandchildren and 3 great grandchildren and a sister, Mrs. Nina Oviatt, of Hudson, Ohio.

Central power on Martin lease of Phillips Petroleum Co., Borger, Texas

Seven well Oil Well Supply Co. geared power installed at Spear lease, Pelican Natural Gas Co., Kilgore, Texas

President's Edict Regarding Hot Oil Shipments Brings About Great Change in East Texas

By L. E. BREDBERG

DALLAS, Tex., July 24.—A great change has come over the East Texas situation. Five days in the field, watching loading racks, refineries and tank trucks and checking up on pipe line and tank car shipments show that violators, be they producers or transporters of hot oil, have had a change of heart since the President published his edict on July 11 in regard to production and shipments of illegally produced oil. The psychology of his action may have been sufficient to bring about a difference in conditions, but there no doubt are few operators and transporters who feel like taking issue with the President and his forces. However, a test case is expected to be brought against the Government in the near future.

Most of "hot oil" was being moved out by tank cars from the field, with two pipe lines considered as large transporters of such oil.

From 100,000 bbls. by tank cars per day to 232 bbls. on July 19 is a considerable drop. On July 20 there were only two cars sent out under tender, and no cars are leaving without proper tender now. The railroads refuse to transport any oil without proper tender. A member of the commission stated that there were 460 loaded oil cars on Gladewater sidings, the railroad refusing to move the oil and the owners of it willing to take any price to get it off their hands. Demurrage will eat it up if the State does not confiscate it. What the railroad will do with it after demurrage eats it up is not known, but it is used for fuel oil.

To "Dry Up Hot Oil"

J. Howard Marshall, one of the legal advisors sent to the field by Secretary of the Interior Ickes, said: "We are here to dry up hot oil and had orders to not come back to Washington until that is done." This sounds as though the Government means business, and the operators feel that it does. Several Federal operatives had been working in the field for some time, unknown to others, digging up facts and making investigations for reports to be made when A. D. Ryan, chief investigator, arrived on July 18.

A late report stated that there were 13 local refineries shut down in the field. If others continue to operate on crude produced illegally they too will probably be put on the "shutdown" list within the next week or two. Failing to pay state and Federal taxes is expected to shut down more of them.

There have been 238 lawsuits filed against violators by the attorney general's department. These suits no doubt will be scrutinized by the Federal men in the field, and given the backing of the higher government.

The new allowable in the field is 573,272 bbls. and daily production is now being held to around this figure. This is an innovation in the field where previously many operators and transporters of illegal crude paid little attention to the railroad commission's orders. The commission lacked power and a sufficient penalty to discourage violators, but with the Federal Government to back it up all operators now give due consideration to the commission.

While the railroad commission was sitting in its offices at Kilgore operators or their field men went in to ascertain just what their allowables should be from their wells. Before this some of them did not seem to care what their allowables were for they did not expect to abide by the commission's orders. One company's foreman was in the office to learn how to make an EN form so as to make proper tender of his oil to a railroad for shipment. His company had previously transported plenty of oil without making proper tender but now it realizes that it is wise to do as ordered by the State's oil and gas regulatory body.

Can Watch Overproduction

The railroad commission's field men can now divert their entire attention to overproduction and intrastate shipments of crude, and refinery activities in the field, the interstate shipment of crude investigations being taken off their shoulders by the Federal operatives. The drying up of overproduced oil and preventing it from reaching refineries will be the principal work of the commission's men. If this can be done then proration in East Texas will have reached the point for which it has been striving since April of 1931.

Runs to local refineries are expected to fall around 45,000 bbls. per day during the present week, and runs by major lines from the field no doubt will show a drop.

A close check is to be made on interstate shipments of refined products.

With violators mending their ways and less crude being produced legally, purchasers, large and small, will be seeking more connections to fill their contracts or meet their demand. A movement has been started to bring down the daily allowable in the field but at present it looks as if all purchasers desired more oil and more connections, and such a move is regarded as premature. However, there are large stocks on hand and with the peak of consumption soon passing with the season, purchasers will be loaded up with connections and storage oil.

The attorney general's department, working in conjunction with the Railroad Commission, has been holding two criminal investigation courts each week to check up on overproduction. Reports are brought in by the operators, run tickets and division orders are submitted, and royalty and landowners have been cooperating with the court in an effort to prosecute violations. Some cases have shown that operators did not make royalty payments for all the oil produced, and that the land and royalty owners have suffered because of the producers holding out such payments.

Checkup of Water Wells

A checkup of water wells in the field shows a total of 370 salt water wells and 10 making fresh water on account of casing leaks. There are 53 new water wells on this report.

There are 340 wells which are pumping or require agitation to make them kick off to flow their daily allowable. Thirty-one others are dead and may be equipped with pumping equipment in order to make their allowables.

Salt water encroachment, from the west side, has bitten deep into the Gladewater, Overton and London areas due to the fact that these areas have been heavily drilled. Drilling has not been so careful with the result that many of the wells have been drilled into the water strata or so near that water has soon come in. Heavy withdrawals in these areas are also responsible for the water movement to the east.

Companies continue to rig up their wells with pumping equipment. They will continue to prepare their leases for pumping regardless of whether or not such equipment is needed now or in the future. One superintendent stated that his company would put in 100 individual units and 22 powers, and other field men stated that their companies intended going ahead with preparing their leases for the time when pumping equipment was needed. They realize that if they wait until winter or spring they cannot economically or easily equip their leases, and that it is more economical to go ahead with this work at the present time when high waters and impassable roads will not delay such work.

One company is installing 18x22 gas engines of 225 horsepower, 200 r.p.m. to drive a 200 k.v.a. generator which will supply sufficient "juice" to pump 15 wells on its lease. Small units will be rigged up on each individual well connected to a high line run over the lease. The same installation is being made on another lease which has 14 wells. Lufkin No. 5½ units will be used on each well. Two wells will be pulled from a back side crank until water becomes too heavy at which time more units can be easily rigged up on the wells.

Rod pulling equipment will be used on all wells except two which are in the river bottoms, and 15/35 oil well motors with hoist equipment will be used on these wells.

Sore Spot Investigated

One of the "sore spots" in the field, producing around 9,000 bbls. per day, of so salled salvage or seepage oil, has been recently checked by the Railroad Commission, even though a Federal injunction exists to prevent the commission from interfering with this production.

Field men of the commission found what they consider the well that has caused all the trouble in this shallow production area, or the well that has been used as a subterfuge. Another string of casing has been run in the well to prevent the oil from seeping up from the Woodbine sand into the Carrizo water sand to where the shallow wells were drilled and from where the oil was supposed to have been coming. Men of the commission allege that oil has been taken from the regular Woodbine sand wells in the area, by use of bypass or direct connections between the deep and shallow wells. Production from these wells is said to be around 400 bbls. per day since a complete investigation was made of the area, and since the casing was run in the one deep well.

Plans have been announced for a quarter of a million dollar casinghead gasoline plant in the north end of the field, Gregg County. Capacity of the plant will be about 24,000 gallons per day. It will be on the W. R. Hughes farm. The Gregg-Tex Gasoline Corp. was formed to lay plans and erect this plant which will serve a part of the field in which there is no other such plant at the present time. The Arkansas Fuel Oil Co. has the nearest plant to the proposed location of the new company. Another plant is located on the west side of the county at Gladewater and Humble Oil & Refining Co. has one in the south end of the county near Kilgore.

Wildcatting

Ed Bateman Drilling Co.'s No. 1 A. C. Carlisle in the Mary Elam Survey, Leon County, is coring at 5,380 feet believed to be in the Eagleford. This is the most interesting test in the county at the present time, Shell Petroleum Corp. and others' No. 1 Beggs in the John Carter Survey having been held up by a fishing job.

Four wildcat locations were staked in the district with two tests abandoned. Wiggins and Champlin's No. 1 fee in the Nacogdoches University Lands was given up as a dry hole at 4,867 feet.

Peden & Olsen have made location for No. 2 Brannon, 600 feet south of their

East Central Texas Wildcats

Week Ending July 24

FRANKLIN COUNTY

Company, well, farm name, section and block—	Remarks
Van Emon et al's No. 1 O. S. Maxton, 910 varas W and 910 varas S of NE cor. of survey, John Brown Sur.	Derrick blew down.
FREESTONE COUNTY	
Devonian Oil Co.'s No. 1 J. G. Beall, 330 ft. out of SE cor. of 220-ac. tract, 2 miles SW of Donie, Isaac Connelly Sur.	Coring 4,900 ft.
GREGG COUNTY	
Adams and Lyles' No. 5 L. Howard, 1,400 ft. from N line and 2,320 ft. from W line of survey, Mary Scott Sur.	Drlg. 3,065 ft.
Almeda Oil Co.'s No. 2 R. P. Doby, 737 ft. from W line and 910 ft. from S line of survey, M. Irwin Sur.	Derrick.
Atlantic Oil Producing Co.'s No. 7 W. Smith, 150 ft. from W line and midway between Nos. 1 and 6, J. S. Carrithers Sur.	Bldg. derrick.
Badgett et al's No. 1 A. A. King, 2,200 ft. from S line and 395 ft. from W line of survey, M. Tennyson Sur.	Rig up.
Bristow & Wynn's No. 6 Moore, 389 ft. from S line and 75 ft. from W line of lease, D. Moore Sur.	Rig up.
Canadian Oil Co.'s No. 3 Whittaker, 147 ft. W and 73 ft. S of original SE cor. of Shell Petroleum's Jones lease, C. Alexander Sur.	Derrick.
C. & G. Oil Co., Inc.'s No. 2 Hoyt, 290 ft. from N line and 535 ft. from E line of lease, J. Mosley Sur.	Rig up.
East Texas Refining Co.'s No. 5 R. R. Collins, 2,480 ft. from N line and 5,290 ft. from W line of survey, D. Sanches Sur.	Derrick.
East Texas Refining Co.'s No. 4 T. W. Tuttle, 5,060 ft. from N line and 6,900 ft. from W line of survey, W. H. Castleberry Sur.	Rig up.
East Texas Refining Co.'s No. 6 T. W. Tuttle, 5,050 ft. from N line and 6,900 ft. from W line of survey, W. H. Castleberry Sur.	Waiting on cmt. to set; T.D. 3,558 ft.
East Texas Refining Co.'s No. 2 D. G. Sparks, 75 ft. S and 200 ft. E of most northerly NW cor. of survey	S.D. 3,495 ft.
East Texas Refining Co.'s No. 6 Doby, N offset to Stanolind's No. 5 Meadows, M. Mann Sur.	Set surface csg.

(Continued on Page 102)

No. 1 John Goodman, which made a small producer opening up the Nacatoch sand producing area just north of the Van Field in Van Zandt County. The Petroleum Pipe Line & Storage Co.'s No. 3 Mrs. S. McGee in the Daniels Survey is shut down at 1,301 feet after striking salt water. Reasonover and others cemented back from 1,257 feet on their test. They drilled plug and the test only showed a small amount of gas and oil. It will probably be abandoned.

The Womack Oil Co., which petitioned the Railroad Commission for a separation of the extreme south end of the East Texas Field from the main body, has another producer in that area. It made 15,000,000 feet of gas with a good showing of oil at 3,660 feet after topping pay at 3,650 feet. It is drilling ahead. A special hearing on the company's petition will be held at Austin on July 28. The Railroad Commission has not yet announced what disposition is likely to be made of the petition, which gave reasons for separating this area from the rest of the field.

Thirty Locations in Main Field

Thirty locations were staked in the main field with 46 wells completed. Operators are drilling up their 10-acre units in order to obtain a higher allowable for their leases.

One-quarter of a mile of welding and 1½ miles of back filling are now being completed near the town of Polk on Sinclair Prairie Pipe Line Co.'s 140 miles of 12-inch parallel line connecting Colonels with Huffman Station near Houston. When this work is completed the line will be ready for use as testing has been done at sufficient intervals to prove the line ready for use when the last weld was completed.

This line gives the Sinclair Prairie Oil Co. an added outlet out of East Texas, and places it in a favorable position if it desires to become a larger purchaser in that field.

The Railroad Commission is completing new tender forms to be required for use of oil shipped from the East Texas Field and other Texas fields. The revised form was agreed upon at a conference of commission officials, railroad companies, pipe line companies, together with representatives of Secretary Ickes of the Interior Department at Washington. Copies of the revised form have been sent to Washington for Federal approval.

COMPLETIONS IN EAST TEXAS

North Gregg County

East Texas Refining Co.'s No. 4 R. R. Collins, top sand 3,686 feet, initial production 60 bbls. per hour through 2½-inch tubing, total depth 3,711 feet.

F. H. E. Oil Co.'s No. 5 R. Christian, top sand 3,630 feet, initial production 100 bbls. per hour through open 2-inch tubing, total depth 3,655 feet.

Gulf Production Co.'s No. 28 M. O. Sheppard, top sand 3,492 feet, initial production 90 bbls. per hour through 2-inch tubing choke, total depth 3,522 feet.

Mansell & Reynolds' No. 1 Mrs. Compton, top sand 3,632 feet, initial production 90 bbls. per hour through 2-inch tubing, total depth 3,645 feet.

W. H. Peckham's No. 1 J. W. Akin, top sand 3,499 feet, initial production 100 bbls. per hour through 2-inch tubing, total depth 3,508 feet. Pilot Oil Co.'s No. 1 Whatley, top sand 3,516 feet, initial production 40 bbls. per hour through 2-inch tubing choke, total depth 3,528 feet.

Rosier & Pendleton's No. 6-A Satterwhite, top sand 3,674 feet, initial production 60 bbls. per hour through 2-inch tubing choke, total depth 3,690 feet.

Selby Oil & Gas Co.'s No. 22-B Snavely heirs, top sand 3,555 feet, initial production 54 bbls. in one-half hour through 1-inch tubing choke, total depth 3,585 feet.

South Gregg County

Atlantic Oil & Production Co.'s No. 9 W. Smith, top sand 3,557 feet, initial production 65 bbls. per hour through 2-inch tubing, total depth 3,577 feet.

Bass & Dillard's No. 3-B S. Carr, top sand 3,479 feet, initial production 75 bbls. per hour through 2½-inch tubing choke, total depth 3,502 feet.

Cranfill & Reynolds' No. 4 Howard, top sand 3,627 feet, initial production 80 bbls. per hour through 2-inch tubing choke, total depth 3,629 feet.

Gulf Production Co.'s No. 5 J. S. Elder, top sand 3,514 feet, initial production 65 bbls. per hour through 2-inch tubing choke, total depth 3,529 feet.

Houston Oil Co.'s No. 3-A Hughey-Ross, top sand 3,474 feet, initial production 35 bbls. per hour through 2½-inch tubing choke, total depth 3,525 feet.

Reserve Petroleum Co.'s No. 3 A. Godfrey, top sand 3,474 feet, initial production 90 bbls. per hour through 2-inch tubing, total depth 3,599 feet.

Sinclair Prairie Oil Co.'s No. 1-B A. A. King, top sand 3,403 feet, initial production 26 bbls. in one-quarter hour through 2½-inch tubing, total depth 3,540 feet.

North Rusk County

Atlantic Oil & Production Co.'s No. 13 Brightwell, top sand 3,704 feet, initial production 90 bbls. per hour through 2-inch tubing, total depth 3,720 feet.

South Rusk County

Combined Oil Co.'s No. 14 G. W. Eaton, top sand 3,707 feet, initial production 115 bbls. per hour through 2-inch tubing choke, total depth 3,725 feet.

Gulf Production Co.'s No. 8-C Mayfield Co., top sand 3,631 feet, initial production 60 bbls. per hour through 2-inch tubing choke, total depth 3,642 feet.

Gulf Production Co.'s No. 3 C. F. O'Quinn, top sand 3,755 feet, initial production 60 bbls. per hour through 2-inch tubing choke, total depth 3,768 feet.

W. B. Hamilton's No. 6 L. B. Gambrell, top sand 3,669 feet, initial production 100 bbls. per hour through 2-inch tubing choke, total depth 3,685 feet.

Mid-Kansas Oil & Gas Co.'s No. 1 Robert Van Zandt, top sand 3,608 feet, no gauge, total depth 3,616 feet.

Darby Petroleum Co.'s No. 4 Rollins, top sand 3,617 feet, initial production 60 bbls. per hour through 2-inch tubing choke, total depth 3,637 feet.

Rodgers and others' No. 1 D. Bradford, top sand 3,501 feet, initial production 50 bbls. per day swabbing, total depth 3,580 feet.

Standard Oil Co. of Kansas' No. 5 M. L. Thompson, top sand 3,611 feet, initial production 100 bbls. in one-half hour through 2-inch tubing, total depth 3,627 feet.

Stanolind and Pure Oil Co.'s No. 20 R. A. Moores, top sand 3,593 feet, initial production 38 bbls. in 54 minutes through open 2-inch tubing, total depth 3,648 feet.

Stewart Holding Corp.'s No. 2 Jiles, top sand 3,701 feet, initial production 65 bbls. per hour through 2-inch tubing choke, total depth 3,721 feet.

Turman Oil Co.'s No. 7 A. D. and D. F. Deason, top sand 3,700 feet, initial production 37 bbls. per hour through 2-inch tubing, total depth 3,775 feet.

Smith County

Barney Carter's No. 2 T. O. Wright, top sand 3,680 feet, initial production 150 bbls. per hour through 2-inch tubing choke, total depth 3,700 feet.

Pine Grove Oil Co.'s No. 4 S. S. Cooke, top sand 3,726 feet, initial production 75 bbls. in 45 minutes through 2-inch tubing choke, total depth 3,729 feet.

Upshur County

Conservative Oil Co.'s No. 6 C. M. and V. Victory, top sand 3,663 feet, initial production 60 bbls. per hour through 2-inch tubing choke, total depth 3,690 feet.

WILDCAT COMPLETIONS

Angelina County

LaRue-Smith and others' No. 1 J. Perkins, dry and abandoned, total depth 1,502 feet; Antonio Flores Survey.

Smith County

Sun Oil Co.'s No. 1 Mrs. E. Jarvis, top Pecan Gap 2,880 feet, base 3,319 feet, top Austin chalk 3,686 feet, top sand 3,939 feet, top Georgetown lime 4,228 feet, dry and abandoned, total depth 4,254 feet.

Van Zandt County

Pure Oil Co.'s No. 4 N. B. Blake, initial production first 24-hour gauge after choke for proration 75 bbls., total depth 2,962 feet.

Big Lake Oil Co. Preparing to Test Its 11-C University Well at 8,323 Feet

By L. E. BREDBERG
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., July 24.—Another deep well in the Big Lake Field, Reagan County, is preparing to test. It is down to 8,323 feet in white lime, the Ordovician, from which other deep wells are producing in this area. This well is Big Lake Oil Co.'s No. 11-C University. It is also drilling No. 12-C University, which is down to 2,700 feet in lime.

Gulf Production Co.'s No. 103 McElroy in Section 197, Block F, Upton County, is making good time. It is down 5,065 feet drilling ahead. Measurement of this well for deviation showed it to be exceptionally straight for such depth, only off 2 per cent from vertical.

More litigation is showing up for the Yates Field, Pecos County, a field which has been quietly producing for several years and in which few lawsuits were expected. The attorney general filed suit on July 18 in the Ninety-Eighth District Court of Travis County, Austin, for the recovery of 561 acres, which was held by the Supreme Court in the Smith-Turner case to be vacant unsurveyed school land. It named as defendants the Mid-Kansas Oil & Gas Co., Fred Turner, Fred Turner, Jr., and the McGinley Corp.

Glasscock Area Extended

Lawson's No. 3-B Edwards extends the Glasscock County area another quarter of a mile to the north. It topped the pay at 2,018 feet and drilled to 2,183 feet, filling 700 feet with oil in two hours. The big pipe has been pulled preparatory to completing the test which is north of the Tribal Oil Co.'s discovery well of this area. The well is located in Section 16, Block 33, Township 2s, T.&P. Survey.

J. M. Cowden of Midland has sold a one-sixteenth mineral interest under five sections of his ranch in northern Ector County. The land is located in Section 24, 26, 27, 34 and 35, Block 43, Township 1n, T.&P. Survey, and is under lease by the Stanolind Oil & Gas Co. which has producers in Sections 26 and 34.

Joe Rush and others' No. 1 Dodge in Section 9, Block 30, Township 1s, T.&P. Survey, eastern Howard County, extends production another half mile to the west in the Dodge or Denman Pool. It topped the pay at 2,645-2,707 feet and at 2,733-2,832 feet. A shot of 450 quarts was placed at 2,643-2,834 feet and filled 2,000 feet with oil in 18 hours after the shot. Total depth is 2,834 feet.

WICHITA FALLS DISTRICT

The wildcat test of the Texas Co. on the Les Johnson farm, 14 miles west of Cromwell in Foard County, has at last logged an oil sand after encountering four gas sands. The test is located in Section 36, Block "L," in S.P. Survey. It was reported to be making around 3,250,000 feet of gas per day, spraying between 50 and 75 bbls. of oil, having a working pressure of around 1,050 to 1,100 pounds. It topped this fifth sand at 3,563 feet and was shut down 2 feet in the pay.

The first two tests on this ranch, Nos. 1 and 2, were dry holes, although both tests encountered gas. This last test, No. 3, was the first to pick up an oil pay. The first gas was logged at 3,088-90 feet. Three other gas sands were cased off in order to allow deeper drilling in quest of an oil sand.

A district court injunction was obtained by the Railroad Commission this week to allow commission field men to go upon the Danciger Oil & Refining Co.'s properties in the Panhandle and gauge storage tanks. A three-judge Federal court recently upheld the commission's proration orders and a suit against the company.

COMPLETIONS IN WEST TEXAS

Howard County

California Oil Co.'s No. 2 Roberts (old well drilled deeper), initial before deepening, 65 bbls. of oil and 225 bbls. of water per day, initial production after deepening 864 bbls. of oil per day on proration test, increases in oil 2,876-78 and 2,986-89 feet.

Ward County

Wahlenmaier Petroleum Co.'s No. 1 Bergman, top pay 2,177 feet, increase in oil and show of gas 2,184-2,208 feet, initial production 60 bbls. of oil per day flowing through casing, total depth 2,212 feet.

Winkler County

Richardson et al's No. 1 Scarborough, top pay 2,820-30 feet, increase in pay 2,843 feet, initial production 62½ bbls. of oil per day flowing through tubing, total depth 2,980 feet.

Changed Conditions Create New Production Problems

(Continued from Page 9)

be applied after natural flow ceases will depend upon local conditions at the well and the personal preference of the operator. It is known that many wells will be produced with gas lift just as lower Simpson wells have been produced for many months. But in the lower Simpson wells there is an appreciable amount of water coming in with the oil and to date Wilcox water has not moved updip much and few of the Wilcox wells make water at present.

This lack of water movement in the Wilcox formation is difficult to explain from the data at hand and while several conditions may be assumed, they do not afford definite knowledge of what actually is taking place.

The reservoir conditions in the Oklahoma City Field are commonly regarded as being complicated and to reduce the history of individual wells to general or average conditions is difficult. An interpretation of the available water data may lead to the conclusion that there is considerable difference in the rate, direction and manner of flooding in the three zones, namely, Arbuckle limestone, lower Simpson and Wilcox sand, due largely to the character of the formations.

The Arbuckle zone, the highest structurally, was flooded first. The next zone to show appreciable water volume was the lower Simpson or more specifically the Johnson sand in the lower Simpson formation. Based upon the location and the dates at which water has appeared in Johnson sand wells it does not seem probable that the water movement into this sand was "updip" along the "floor" of the Arbuckle, but rather across the limestone formation.

The path of this water movement was probably circuituous and with enough wells producing water it is possible that it could be handled without any appreciable increase. This is borne out by actual observations recently made of the rate of water production from the lower Simpson. It does not seem to be gaining in volume although water maps do indicate that it is actually spreading through the formation. About 37 per cent of lower Simpson wells now make water and about 50 per cent of the area is affected. Part of the lower Simpson formation is not drilled.

In a paper by D. R. Knowlton, H. C.

Charles and D. A. McGee, on the Wilcox sand of Oklahoma City presented before the midyear meeting of the American Petroleum Institute in Tulsa, in June, 1932, it is stated that the Wilcox formation is estimated to cover an area of 5,250 acres or 41 per cent of the total area of the field. Of the total estimated productive area of the Wilcox sand, 3,450 acres are within the corporate limits of Oklahoma City. Of the area within the corporate limits 1,700 acres, or 49 per cent, are in the U-7 zone or that part of the city open to drilling. The remaining 1,750 acres are within the city limits underlying the closely built portion in which drilling is prohibited. This portion that cannot be drilled is 33 per cent of the entire area estimated to be productive in the Wilcox.

It now seems apparent that water has not displaced the oil produced in the Wilcox zone and an appreciable pressure drop has occurred near the "tip" of this formation. While sufficient data are not available to make a complete analysis of this condition it is known that this Wilcox sand is relatively thick and well saturated with oil. It has good porosity and permeability. Wells are closely spaced near the tip of the Wilcox sand in the north portion of the field and as a consequence a greater quantity of oil has been withdrawn from this portion of the zone.

This rapid withdrawal of oil from only a portion of the Wilcox sand seems to lead to the conclusion that the time element required for replacement has not been sufficient and there has been a lag in oil movement updip. This further leads to the belief that there is a sufficient body of oil in the undrilled portion of the Wilcox zone to present an effective barrier in the path of the water in its attempt to move updip.

It is known that the vertical elevation between the tip of the Wilcox sand and the original water level is more than 300 feet and it is probably over a mile laterally between these points. In other words the hydrostatic conditions at the edge of the field are not favorable to water movement into or up through this oil bank and for this reason the expected repressuring of the Wilcox producing area has not taken place.

How much time must elapse before a sufficient differential in pressure between the gas cap and the edge water is difficult to estimate, but in the meantime it is apparent that gas will drain out of solution in the oil over much of the total producing area. This will lower the viscosity of this oil and make its recovery more difficult.

Completion Methods

As most of the Oklahoma City wells were completed with rotary and the bottom of the hole was drilled a sufficient distance to insure a good well, little coring was done in the producing section of the formation and its detailed stratigraphy was not well known.

One company recently completed one of its wells with cable tools and got some interesting data in so doing. This method of completion was possible because the formation pressure had dropped so low that the cable tools could be operated against it. Formerly formation pressures were so high that attempts to use cable tools resulted in fishing jobs because the tools were blown up the hole and caught in the casing.

In this cable tool completed well it was found that the upper 30 feet of the Wilcox formation produced gas only. Below this was from 6 to 10 feet of good oil and gas sand and then a break with more oil sands below. It was definitely proven that the Wilcox sand is not a continuous body from top to bottom and there are thin and rich streaks as well as partings, all of which have their effect upon the well's productive capacity.

This condition had been suspected in that field for a long time but production men did not have much datum to go on in attempting to solve some of their problems. Not knowing the relative position of partings in the Wilcox sand it was difficult to plan repair methods to be used in cutting off the upper gas cap part of the formation that has developed in recent months.

Now that some information is at hand regarding the stratigraphy of the Wilcox it is suggested that full strings of 5½-inch casing may be run to cut off the upper gas zone or liners used to attempt to divert the gas flow through the oil-bearing portion of this formation. This program is going to take time to formulate and just how far it can be carried will depend upon conditions found in the individual wells.

Standard of California Has Arabian Concession

The granting of an oil concession in the Arabian Saudian Kingdom to the Standard Oil Co. of California by King Ibn Saud is reported. The decree gives exclusive rights of exploration for oil and exploitation in eastern Arabia to the company.

The company already has a concession on the Bahrein Islands in the Persian Gulf, where oil has been found. The geological formation in that region gave promise oil also would be found on the mainland in Arabia. The company's representative at Jeddah succeeded in getting a draft concession from the king, which he sent to America. The company agreed to the terms with certain modifications, which now have been accepted by the Saudian government. Exploration work is expected to begin soon. It is believed that if oil is found it will revolutionize all Arabia, transforming the desert into an industrialized country.

ROCKY MOUNTAIN AREA

Average daily production for the week ending July 22 follows:

WYOMING

	Bbls.
Salt Creek	16,210
Big Muddy	1,840
Badger Basin	40
Byron-Garland	100
Byron-East	Shut in
Dallas Derby	540
Dutton Creek	80
Elk Basin	550
Ferris	29
Frannie	220
Grass Creek	Shut in
Greybull	0
Hamilton Dome	840
Hudson	340
LaBarge	1,180
Lance Creek	200
Lost Soldier	1,950
Mule Creek	Shut in
Midway	70
Notches	Shut in
Oregon Basin	300
Osage	640
Pilot Butte	30
Rex Lake	30
Rock River	1,320
South Casper	Shut in
Poison Spider	250
Teapot	20
Warm Springs	0
Total	26,775

MONTANA

Buckley Border	370
Cat Creek	710
Cut Bank	1,300
Dry Creek	830
Kevin-Sunburst	3,450
Lake Basin	60
Pondera	1,060
Total	7,780

COLORADO

Florence	270
Fort Collins and Wellington	590
Iles Dome	530
Moffat	650
Orchard	140
Rangely	30
Tow Creek	230
Total	2,540

NEW MEXICO

Artesia	520
Cooper area	60
Empire area	?
Eunice area	610
Getty Pool	0
Hobbs	30,150
Hogback	220
Hospah	Shut in
Jal	1,510
Lea area	2,170
Jackson	330
Maljamar	220
Rattlesnake	640
Table Mesa	80
Total	37,010
Total all fields	74,100
Total previous week	73,300
Difference	800

Wildcat Operations in West Texas

Week Ending July 24

BREWSTER COUNTY

C. P. Link & Joiner et al's No. 1 McIntyre, 853 ft. from S and 2,390 ft. from E line of Sec. 31, W. J. Mitchell Sur. ..... Drlg. 900 ft.

CONCHO COUNTY

Company, well, farm name, section and block— Remarks

Beasley et al's No. 1 Waring Estate, 400 ft. from N and E, Sec. 162, T.&N.O. Sur. ..... Drlg. 2,675 ft.

CROCKETT COUNTY

Yount's No. 1 Shannon, 330 ft. out of NW cor. of Sec. 35, Blk. 1, G.C.&S.F. Sur. ..... Drlg. 2,245 ft.

CRANE COUNTY

Loffland Bros.' No. 1 Tubbs, 1,334 ft. from N line and 1,320 ft. from W line of Sec. 9, Blk. B-27, P.S.L. Sur. .. S.D. 1,100 ft.

CULBERSON COUNTY

Miller Bros.' No. 1 fee, 1,980 ft. from N line and 660 ft. from E line of Sec. 61, Blk. 97, P.S.L. Sur. ..... Drlg. 1,820 ft.

DAWSON COUNTY

Albaugh, Ray et al's No. 1 Robinson, 1,320 ft. from N and W lines of Sec. 46, Blk. M, E.L.R.R. Sur. ..... Drlg. 1,550 ft.

ECTOR COUNTY

Broderick & Calvert et al's No. 1 E. F. Cowden, 2,240 ft. from E line, 330 ft. from S line of Sec. 35, Blk. 44, Twp. 2s, T.&P. Sur. ..... Drlg. water well.

Gilpen et al's No. 1 B. H. Blakeney, 330 ft. from S and 440 ft. from E line of Sec. 32, Blk. 43, Twp. 1n, T.&P.R.R. Sur. ..... Derrick.

Landreth Production Co. & Llano Oil Co.'s No. 1 O. B. Holt, 660 ft. from S and W lines of N half of Sec. 20, P.S.L. Sur. ..... Prepare to spud.

Landreth Prod. and The Texas Company's No. 1 Holt, 660 ft. from S line and 2,025 ft. from E line of Sec. 16, Blk. 43, Twp. 1n, T.&P. Sur. ..... Prepare to run tubing and test with acid; T.D. 4,450 ft.

Moran's No. 1 R. W. Smith, NW cor. of Sec. 12, Blk. 43, Twp. 1n, T.&P.R.R. Sur. ..... Drlg. 2,480 ft.

Stanolind Oil & Gas Co.'s No. 2 E. F. Cowden, 660 ft. from N and W lines of Sec. 26, Blk. 43, Twp. 2s, T.&P.R.R. Sur. ..... Prepare to spud.

Thomas et al's No. 1 Edwards, 330 ft. from S, 2,310 ft. from E, Sec. 38, Blk. 42, Twp. 2s, T.&P. Sur. ..... Set casing at 3,337 ft.

Fred Turner's No. 1-A Addis, 1,650 ft. from N line and 2,300 ft. from E line of Sec. 36, Blk. 45, Twp. 2s, T.&P. Sur. ..... S.D. 4,113 ft.; flowing about 70 bbls. day; may deepen.

Waggoner and Western Corp.'s No. 1 F. U. Addis, 1,650 ft. from N, 990 ft. from W line of Sec. 35, Blk. 54, Twp. 2s, T.&P.R.R. Sur. ..... T.D. 3,970 ft.; run tubing.

FISHER COUNTY

Cranfill & Reynolds' No. 2 George, 330 ft. from N and W lines of NE of Sec. 200, Blk. 1, B.B.B.&C. Sur. ... T.D. 3,115 ft.; top lime 3,093-3,115 ft.; treating with 1,000 gallons of acid.

Southern Oil Co.'s No. 1 Beavers, 330 ft. from W and 660 ft. from S of S half of SW Sec. 193, B.B.B.&C. Sur. ..... Flowed on agitation 130 bbls. first 3 hours; T.D. 3,103 ft.

GLASSCOCK COUNTY

Helms et al's No. 1 Weigar, 330 ft. from N and E lines of Sec. 18, Blk. 34, Twp. 3s, T.&P.R.R. Sur. ..... S.D. for casing; T.D. 2,037 ft.

Lawson's No. 3 Mann Edwards, 1,321 ft. from S line and 1,340 ft. from E line of Sec. 16, T.&P.R.R. Sur., Blk. 33, Twp. 2s ..... T.P. 2,108 ft.; filled 1,000 ft. of oil; T.D. 2,183 ft.

HOWARD COUNTY

Crosby Drlg. Co.'s No. 1 Leatherwood-Satterwhite, C of SE of NW, Sec. 25, Blk. 33, Twp. 1n, T.&P. Sur. .... Drlg. 720 ft.

L. C. Harrison's No. 4 L. C. Denman, 2,370 ft. from the E line and 1,325 ft. from S line of Sec. 18, T.&P.R.R. Sur., Blk. 34, Twp. 1s ..... T.D. 3,008 ft.; plugged back to 2,915 ft.; shot 30 quarts 2,635-84 ft.; cleaned out and swabbed 35 bbls. in 24 hours.

JONES COUNTY

Dyer's No. 1 Odom, 200 ft. from S and 170 ft. from W of N 320 acres, G. Zumwalt Sur. ..... Drlg. 650 ft.

LOVING COUNTY

Eppenauer Drlg. Co.'s No. 1-A Victor, 330 ft. from SW and 335 ft. from SE of NW of N half Sec. 4, Blk. 2, W.&N.W. Sur. ..... Rigging up standard tools

PECOS COUNTY

A. & M. Pet. Co.'s No. 1 University, 1,725 ft. from S line and 330 ft. from E line of Sec. 31, Blk. 16, University Sur. ..... S.D. for casing; T.D. 1,624 ft.

REAGAN COUNTY

Big Lake Oil Co.'s No. 10-C University, 2,025 ft. from S and 375 ft. from W, Sec. 25, Blk. 9 ..... Running tubing; T.D. 8,650 ft.

Big Lake Oil Co.'s No. 11-C University, 2,300 ft. from S line and 2,140 ft. from E line, Sec. 12, Blk. 2, University Sur. ..... Drlg. 8,333 ft.

Big Lake Oil Co.'s No. 12-C University, 928 ft. from N, 740 ft. from E line of Sec. 12, Blk. 2, University land ..... Drlg. 2,206 ft.

Continental Oil Co.'s No. 8-B University, 1,320 ft. from S and 1,775 ft. from W, Sec. 24, Blk. 9 ..... Produced 300 bbls. on 18th; T.D. 8,695 ft.

Continental Oil Co.'s No. 9-B University, 1,900 ft. from S line, 1,305 ft. W of E line of Sec. 39, Blk. 9, University Land Sur. ..... Drlg. 3,575 ft.

J. P. Williams et al's No. 1 Scott, 1,650 ft. from N and 330 ft. from W, Sec. 179, Blk. 1, T.&P. Sur. ..... Drlg. 2,286 ft.

REEVES COUNTY

Freels Hugh et al's No. 1 J. H. Greeman, 330 ft. from NE and 2,310 ft. from S line of Sec. 21, Blk. 3, H.&G.N. Sur. ..... Underreaming lugs; T.D. 1,100 ft.

Merry Brothers & Perrin's No. 1 H. H. Johnson, 1,015 ft. from S and W lines of Sec. 5, Blk. 4, H.&G.N. Sur. .. Elevation 2,610 ft.; waiting on cement to set; T.D. 4,170 ft.

RUNNELS COUNTY

Mann's No. 1 T. B. Wade, 330 ft. from E line and 150 ft. from S line of 73-acre tract, Blk. 10, Norvel Travis Sur. No. 533 ..... Drlg. 2,285 ft.

Simmons et al's No. 1 H. E. Wade, 150 ft. from S and 1,650 ft. from W line, Subdv. No. 8, Norvel Travis Sur. No. 533 ..... Derrick.

SCHLEICHER COUNTY

Eastland Oil Co.'s No. 1 Joe Tisdale, Sec. 29, Blk. M, G.H.&S.A. Sur. ..... T.D. 6,108 ft.

UPTON COUNTY

Gulf Prod. Co.'s No. 103 McElroy, 1,980 ft. from S and 660 ft. from W, Sec. 197, Blk. F, C.C.S.D.&R.G.N.G. (WARD COUNTY) ..... Drlg. 4,944 ft.

George Bentley et al's No. 1 C. Bergman, 990 ft. from NE line and 2,310 ft. from NW lines of Sec. 26, Blk. 5, H.&T.C. Sur. ..... Fishing for tools; T.D. 2,647 ft.

George Bentley et al's No. 1 A. Emory, 1,980 ft. from NE line and 2,310 ft. from NW line of Sec. 26, Blk. 5, H.&T.C. Sur. ..... T.D. 2,301 ft.

W. A. Black et al's No. 1 Ann B. Gordon, 990 ft. from NW and 330 ft. from NE lines of Sec. 6, Blk. 34, H.&T.C. Sur. ..... Running tubing; T.D. 2,485 ft.; flowed 355 bbls. on 9th.

Eppenauer Drlg. Co.'s No. 1 University, 330 ft. from N and 440 ft. from E of S half of Blk. 16 ..... S.D. 1,415 ft.

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District Superintendent, Production Dept.
Magnolia Petroleum Co., Longview, Tex.

D. V. CARTER
Chief Petroleum Engineer
Magnolia Petroleum Co., Kilgore, Tex.

DR. GEO. EDWIN DORSEY
Chief Geologist
Magnolia Petroleum Co., Dallas, Tex.

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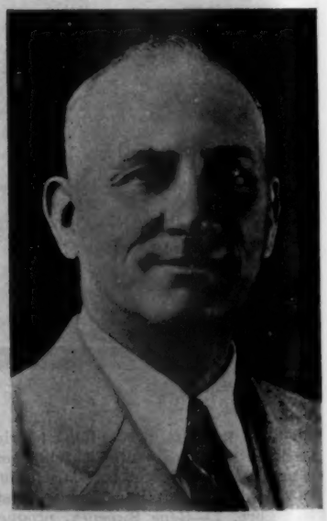

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1.—W. A. Sizemore, district foreman; H. J. Summy, district superintendent; W. C. Summy, petroleum engineer; Charles Lislie, production clerk, of the Sinclair Prairie Oil & Gas Co. 2.—Left to right: Dave Camden, assistant purchasing agent, Shreveport, La.; C. H. Stout, East Texas production superintendent; A. C. Jamison, general production superintendent, all of the Arkansas Fuel Oil Co. 3.—C. H. Duffy, superintendent of the north end; C. N. Haush, head of geological department of production, East Texas district, Gulf Production Corp. 4.—W. R. Leard, petroleum engineer; G. R. Kennedy, petroleum engineer; and M. T. Davis, superintendent of rig building of the Magnolia Petroleum Co., Kilgore, Tex. 5.—T. K. Franks, chief production clerk, and W. A. Blythe, district foreman, of the Arkansas Fuel Oil Co. 6.—T. L. Regon, district engineer, and E. J. Harmon, superintendent of production in East Texas, Stanolind Oil & Gas Co. 7.—J. P. Straight, district superintendent; C. R. Webb, petroleum engineer; G. E. Goddard, divisional superintendent; F. A. Lawrence, district superintendent, all of the Empire Oil & Refining Co.

Gasoline Price Cutters on Pacific Coast Caused Low Crude Oil Prices and Bad Half Year

By L. P. STOCKMAN
Staff Correspondent, California Fields

Unfavorable marketing conditions, especially because of ruinous gasoline prices in the Pacific Northwest, and a drastic reduction in crude oil prices March 5, resulted in severe financial losses to California producers and refiners during the first months of the current year, and this instability was a dominating influence in general conditions. The marketing situation on the Pacific Coast cleared up during the latter part of May and a further subsequent improvement led a partial restoration of crude oil prices on June 26. Impressed by this fundamental improvement, California operators are looking forward to the second half-year with confidence and a hope that application of the Industrial Recovery Act will prove beneficial and become a stabilizing factor of considerable importance. Crude oil production during the entire first half of the year was consistently in excess of the established allowable and marketers were consequently obliged to move crude and refined oil at or below cost in order to alleviate conditions and thus prevent stocks from piling up. Most of the export shipments to Japan and a large part of the gasoline moved to the Atlantic Coast represented a loss, especially where California marketers increased stocks of residuum, which has been a drug on the market for a long time, or disposed of this commodity for 50 or 60 cents per barrel.

Crude oil production in California during the first six months of 1933, despite the consistent excess above the established allowable, was the lowest for any similar period since 1922, when production aggregated 61,092,778 bbls. for the first half year, 78,534,098 bbls. for the second half and 139,626,876 bbls. for the entire year.

Mountain View

The Mountain View Field of Kern County became a recognized entity in May, 1933, when Dana Hogan finished No. 1 Wharton as a commercial producer. The existence of an oil field at Mountain View has been more or less generally recognized in view of exploration work undertaken by the Shell Oil Co. in that area some two or three years ago. The Shell, however, failed to develop sustained production and the field therefore remained as a theoretical possibility. No. 1 Porter Day of the Shell showed enough on a preliminary production test to justify the expectation of a substantial accumulation, as this well came in flowing at the rate of approximately 2,000 bbls. per day. The Shell, due to its large holdings, killed No. 1 Day and resumed drilling in order to ascertain the possible existence of deeper production. The company found oil sand in the bottom of the hole but this did not result in commercial production and the company accordingly plugged back in an attempt to recomplete the well in the first sand found in the Santa Margarita. This attempt proved unsuccessful and the area remained more or less quiet until Dana Hogan started drilling operations on the Wharton property.

The Mountain View Field is located approximately 10 miles southeast of the business district of Bakersfield, 6 miles northwest of Arvin and about 5 miles due south of Edison. The field is one of three topographic highs on the Bear Mountain fault zone but, unlike Los Angeles Basin fields on the Newport Beverley fault zone where the topography is very pronounced, surface indications in the Mountain View Field are almost negligible.

Dana Hogan's discovery well in the Mountain View Field is producing from the Santa Margarita but there is a possibility that subsequent development may prove up both the Santa Margarita and the lower part of the Kern River series as commercially productive. In the San Joaquin Valley, the Kern River group includes the Tulare of lower Pleistocene, Etchegoin and Jacalitos of Pliocene Age, while formations of the underlying Miocene Age include Santa Margarita, Monterey, Temblor and Vaqueros. The Kreyenhagen in this section of the State is either lower Oligocene or upper Eocene, while the Tejon formation is usually located within the Eocene Age.

PRODUCTION OF CRUDE BY MONTHS—CALIFORNIA OIL DISTRICTS
(Barrels of 42 U. S. gallons)

	1933		1932	
Month—	Total barrels	Daily average	Total barrels	Daily average
January	14,460,282	466,461	15,532,141	501,037
February	13,107,043	468,109	14,616,862	504,030
March	13,414,980	432,741	15,575,915	502,449
April	14,262,943	475,431	15,524,444	517,481
May	14,817,633	477,988	15,575,741	502,443
June	14,344,654	478,155	14,118,970	470,632
Total first half	84,407,535	466,340	90,944,073	499,679

Many Pools of Stable Production

The production of most California fields was approximately the same during the first six months of 1932 and 1933. There were several exceptions to this rule, namely, Santa Fe Springs, Playa Del Rey, Long Beach and Huntington Beach. Elwood, due to decreased drilling and normal decline, was approximately 500,000 bbls. lower in the first six months of 1933 than was the case during the similar period in 1932. Dominguez and Inglewood were down about 400,000 due to decreased development and normal decline in the productive formation. Montebello, due to curtailment and a normal decline, showed a somewhat lower production during the first six months of 1933, while San Miguelito was about 100,000 bbls. higher due to the deepening and subsequently larger production of the Continental Oil Co.'s No. 1 Grubb. Santa Fe Springs showed the largest decline during the first half of the current year, as production was approximately 2,000,000 bbls. less, due to depletion, than during the similar period last year. Long Beach production, due to the same reaction, was approximately 1,500,000 bbls. below the field's output for the first six months of 1932. Playa Del Rey also showed a relatively large decline in production, as the field's output during the first six months of 1933 was about 1,000,000 bbls. lower than the output during the comparable period last year. This decrease is attributable to normal decline and to the fact that the town lot area will not sustain any further drilling. The Union and Ohio will have some undeveloped acreage, but these companies, now that peak production has been passed, have refrained from drilling inside locations. This will undoubtedly result in a lower production per acre due to depletion of gas by overdrilling in the town lot area, but at the same time this deficiency will probably be adequately compensated for by a higher price when the inside locations are drilled up. Huntington Beach, which has probably had more ups and downs than any other Los Angeles Basin field, showed a higher production during the first half of 1933 than was the case during the first six months of 1932. This field, reflecting renewed intensive drilling in the Seventeenth Street town lot area, registered an increase in production of approximately 1,000,000 bbls. over the first six months of 1932. Development work in the Huntington Beach town lot area is not the result of any new discovery but is rather attributed to the fact that operators by whipstocking wells or drilling crooked holes are enabled to intercept heretofore undeveloped acreage or tideland property.

Kettleman Hills

The Kettleman Middle Dome, which officially became a new field in April, 1932, was removed from the doubtful class in April, 1933, when the Standard Oil Co.'s well No. 6-29 V was successfully completed as a commercial producer. This well, on a preliminary production test during April and May, 1932, produced 6,687 bbls. and 3,850 bbls., respectively. The well was killed early in May, 1932, in order that the hole might be drilled ahead as the Petroleum Securities had revealed the existence of a better zone a little deeper. As a consequence of this decision, no oil was produced between May, 1932, and April, 1933. The Standard Oil Co.'s No. 6-29 V, the first commercial producer finished in the Kettleman Middle Dome Field, was recompleted in the lower zone at 8,406 feet and brought in flowing 1,250 bbls. of exceptionally clean 53.1 gravity oil and approximately 30,000,000 feet of natural gas per day.

Operators in the Kettleman North Dome Field experienced considerable water trouble during the first half of the current year for the first time. This was due more to mechanical trouble, however, and should not be construed as indicative of the possibility that the field has gone to water. This is evidenced by the fact that the Superior Oil Co. successfully overcame the troublesome water condition which delayed completion of No. 6 Huffman. There is no questioning the fact that edgewater has apparently fingered in at the corner of Sections 35 and 36-21s-17e and Sections 1 and 2-22s-17e, as three wells in this immediate area are showing unusually high cuts. No. 1 Dixon of the Shell in Section 36-21-17 is cutting approximately 20 per cent emulsion, while the Associated's Nos. 1 and 2 on the Whepley lease in Section 35-21-17 are cutting 6 per cent and 35 per cent, respectively. The Associated recently

PRODUCTION OF CRUDE BY DISTRICTS, JANUARY TO JUNE, INCLUSIVE, 1933

Districts—Northern Fields—	January	February	March	April	May	June	Total	Daily
Coalinga	338,359	296,684	327,275	314,148	339,064	322,463	1,937,993	10,707
Elk Hills	376,574	361,894	394,647	386,196	390,489	380,231	2,290,031	12,652
Fruitvale	144,607	141,047	156,592	147,191	153,079	138,740	881,256	4,868
Kern River	269,647	252,613	272,990	263,071	268,438	271,543	1,598,302	8,830
Kettleman North Dome	1,794,516	1,610,728	1,845,562	1,787,599	1,893,947	1,841,233	10,775,585	59,532
Kettleman Middle Dome	.....	.....	.....	9,128	26,462	13,326	48,916	270
Lost Hills-Belridge	279,807	261,714	291,248	272,325	288,253	222,847	1,616,194	8,929
McKittrick	54,021	48,760	52,540	50,811	53,955	51,692	311,779	1,723
Midway-Sunset	1,486,925	1,325,453	1,468,791	1,411,176	1,453,637	1,386,041	8,532,023	47,128
Mountain View	.....	.....	.....	.....	25,555	23,653	49,208	272
Mount Poso	241,279	229,326	273,110	239,426	258,897	238,360	1,480,408	8,179
Round Mountain	70,479	81,398	93,043	89,778	88,223	80,873	503,788	2,783
Wheeler Ridge	14,523	13,299	14,149	14,178	14,943	14,172	85,263	471
Coastal Fields—								
Capitan	.....	.....	915	480	541	368	2,304	13
Elwood	421,506	376,949	414,928	382,802	415,103	408,219	2,419,507	13,368
Rincon	65,230	57,790	62,458	60,545	60,092	56,676	362,791	2,004
San Miguelito	29,075	27,073	31,842	32,295	35,348	34,684	190,317	1,051
Santa Barbara	13,602	18,686	21,718	20,429	26,531	25,761	126,127	697
Santa Maria	82,363	77,916	89,389	82,860	77,483	73,045	483,047	2,669
Summerland	3,005	2,324	3,101	2,563	2,050	2,027	16,600	92
Ventura Avenue	1,132,807	1,044,190	1,123,484	976,187	1,012,023	992,258	6,280,949	34,701
Ventura-Newhall	94,971	88,027	99,317	96,747	101,964	97,554	578,580	3,197
Watsonville	1,937	1,750	1,887	1,725	1,860	1,800	10,959	61
Southern Fields—								
Coyote	303,629	276,287	236,279	240,001	208,331	300,240	1,763,767	9,745
Dominguez	568,885	506,278	395,010	548,242	607,449	571,602	3,197,466	17,666
Fullerton (Brea Olinda)	238,191	217,615	212,072	231,365	231,300	224,627	1,355,170	7,487
Huntington Beach	798,346	713,884	641,386	834,453	903,219	919,471	4,810,759	26,579
Inglewood	378,353	339,469	304,001	384,808	372,630	355,875	2,135,136	11,796
Lawndale	7,674	7,480	3,242	7,652	6,315	6,993	44,862	248
Long Beach	2,125,392	1,962,927	1,924,747	2,311,282	2,271,496	2,236,377	12,732,221	70,342
Los Angeles-Salt Lake	27,305	25,761	24,684	26,434	26,494	27,254	157,932	873
Montebello	145,165	131,828	125,738	160,116	149,426	141,298	853,570	4,715
Newport	.....	.....	.....	.....	.....	.....	.....	.....
Playa Del Rey	397,936	345,403	348,137	362,066	368,118	349,808	2,171,557	11,993
Potrero	18,040	16,068	14,172	12,859	10,917	8,811	80,867	447
Richfield	181,786	173,805	167,823	195,043	198,977	192,875	1,089,309	6,074
Rosecrans	91,466	83,867	71,291	93,329	98,267	91,684	529,904	2,927
Santa Fe Springs	1,694,144	1,471,736	1,509,181	1,617,933	1,669,151	1,619,610	9,581,745	52,938
Seal Beach	346,980	311,178	195,081	373,591	379,372	392,751	1,998,953	11,044
Torrance	189,604	175,355	179,250	187,403	193,793	191,029	1,116,434	6,168
Whittier	34,664	30,971	28,909	33,723	33,912	35,777	197,956	1,094
Total	14,460,282	13,107,043	13,414,980	14,262,943	14,817,633	14,344,654	84,407,535	466,340

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killed No. 3 Whepley due to the inability to reduce the water cut, approximating 75 per cent. Water in this well, however, has been located at 7,550-7,775 feet, or about 600 feet below the shoe of the 9-inch water string landed and cemented at 7,107 feet. It is quite likely that the company will land a new string of casing below the source of water and may consequently overcome the water problem. A similar procedure may also be productive in Nos. 1 and 2 on the Whepley lease of satisfactory results as the shutoff was effective in these wells at 6,960 and 7,073 feet, respectively. Further indication of edgewater encroachment in the upper part of the Ochsner zone in this area is evidenced by Kenda's difficulty with water in well No. 21-1 P, located in Section 1-22-17. This project was bottomed at 8,997 feet but subsequently plugged back to 8,805 feet and then to 8,743 feet when the first plug proved ineffective. It is significant to note in contrast with this water trouble that the North American's No. 1 Signal, less favorably located with respect to structure, is still clean. This may be due to the fact that the water string on this job was effected by cementing through perforations at 9,133 feet, in the lower part of the Ochsner zone. All three of the producing wells on the Felix lease of the Petroleum Securities are still clean, but this may be due to the fact that the wells in question are a little more more favorably located with respect to the axis of the structure. Up to the present time no evidence of edgewater encroachment has been manifested in the Huffman area, located in the extreme western end of the structure. The vast amount of undeveloped acreage in the Kettleman North Dome Field renders edgewater encroachment as of minor consequence, especially in view of the fact that the underlying Eocene will probably ultimately be found productive in this field. The most disturbing factor, and this of course is conducive to edgewater encroachment around the edge of the structure, is the apparent depletion of natural gas in the Ochsner or Huffman zone. In order to compensate for this, the Kettleman North Dome Association has been taking gas from the upper, or Elliott high pressure gas zone, and injecting this gas into the underlying Ochsner zone. This phase of work is of particular interest because of the fact that there has been no abnormal waste of natural gas in the Kettleman North Dome Field up to the present time. It is worth noting, however, even though the underlying Eocene is expected to be a prolific producer of natural gas and upon development will have a sufficient excess of gas to permit reinjection into the Ochsner zone.

Lost Hills-Belridge

Production of the Lost Hills-Belridge fields during the first six months of 1933 was on about a par with the output during the first half of 1932 when this group of fields showed an output of 1,673,776 bbls. The relative stability of production in this area can be attributed to the fact that operators in the North Belridge Field have effected a gentlemen's agreement to refrain from deep zone exploitation until conditions improve, or the agreement is mutually dissolved. In addition to refraining from developing the Eocene, which has proved up as highly productive in the North Belridge Field, operators have conscientiously observed curtailment obligations in a commendable manner. Two wells have been finished in the Eocene at North Belridge up to the present time. One of these, the discovery well of the Belridge Oil Co., has been shut in and will remain in this status until conditions change. The second completion in the productive formation of Eocene age in the North Belridge Field is the Ohio Oil Co.'s No. 1 Bloemer, which, in conformity with the production agreement, has been beaned back to approximately 300 bbls. per day.

Field Operations

The number of new wells completed in California during the first six months of 1933 was slightly lower than the number finished during the first half of 1932, but the aggregate initial daily production of new wells, however, was substantially higher due to prolific completions in the Kettleman North Dome Field and other areas showing flush or semiflush production. Drilling operations as a whole during the first half of 1933 were slightly lower than the amount of work undertaken during the corresponding period last year, but drilling showed a substantial improvement in May and June, 1933, which indicates a somewhat higher average during the balance of the year. The number of new rigs erected supports this evidence and tends to indicate an increase in new drilling during the last half of the current year.

The Coal Oil Point district of Santa Barbara County was definitely eliminated as a possible oil field when the Doyle Petroleum abandoned a deep test on the Bolsa Chica's tideland permit No. 191. The Bolsa Chica company drilled the first test on this permit a few years ago but failed to develop commercial production in the Vaqueros formation. The Superior Oil Co. subsequently entered the picture and carried this hole down into the Sespe with unfavorable results. The Superior relinquished its interest in the well and the William P. Andrews Oil Co. took over the hole and after plugging back attempted to develop production in the Vaqueros by perforating the casing. This proved unsuccessful and the property stood idle for several months until the Doyle Petroleum began work which ultimately resulted in an abandonment.

In the San Joaquin Valley the Standard Oil Co. abandoned No. 1 Mascot as a failure. The Standard resumed drilling operations July 1, 1932, following a suspension of 18 months, and although a concerted attempt was made to stimulate production, the well failed to respond with the result that the hole was abandoned early this year after being plugged back and tested out by stages. Drilling operations during the course of the next six months are expected to be centered in the San Joaquin Valley for the reason that this area offers the most attractive possibilities. The Western Gulf has already located a well in the area north of Coalinga, where the company has leased approximately 102,000 acres and an early test is anticipated. The Ohio Oil Co. has leased a block of acreage in the Buena Vista Lake area of Kern County and an early test in this area is also anticipated. Buena Vista Lake is a natural drainage area from nearby elevations, but due to subnormal rainfall during the past few years has been practically dry. The Ohio has conducted some geophysical exploration in the Buena Vista Lake region of the San Joaquin Valley and may possibly have found some evidence of structure. This type of work has not proved especially productive in California up to the present time and the outcome of this work will therefore prove of considerable interest.

TOTAL FLUID STOCKS OF PETROLEUM HELD IN PACIFIC COAST TERRITORY

(Barrels)

1933—	Heavy crude and fuel	Refinable crude	Gasoline	Naphtha distillates	All other stocks	Total all stocks
January 31	99,796,706	39,229,180	15,726,068	4,643,144	6,812,386	166,416,484
February 28	99,060,173	38,867,508	15,535,236	4,734,357	6,794,676	165,905,930
March 31	98,795,333	39,913,990	15,501,273	4,452,681	6,819,043	165,512,320
April 30	99,573,713	39,478,710	15,387,516	3,937,584	6,850,595	165,578,108
May 31	99,975,789	38,656,916	15,073,936	4,339,235	7,336,558	165,336,532
June 30	100,492,854	37,504,810	14,796,506	4,004,974	7,384,169	164,179,313

CALIFORNIA FIELD OPERATIONS BY DISTRICTS FOR FIRST HALF 1933

	Oil wells comp. No.	Oil wells comp. Bbls. dly.	Oil wells* Drlg.	Oil wells* Prod'ng	Abandoned Drlrs.	Abandoned Prodrs.	New rigs
Northern—							
Buttonwillow Gas Field	2	Gas	1	1	1	...	2
Coalinga	...	.....	...	643	...	3	...
Dudley Ridge Gas Field	...	.....	1	...	2	...	2
Elk Hills	...	.....	...	194	...	...	...
Fruitvale	5	1,638	3	53	1	...	7
Kern River	...	.....	1	953	1	2	3
Kettleman Middle Dome	...	.....	...	1	...	...	...
Kettleman North Dome	7	32,108	12	37	...	...	9
Lost Hills-Belridge	3	7,896	2	144	...	...	4
McKittrick	...	.....	...	115	...	...	...
Midway-Sunset	4	681	1	1,759	1	14	6
Mountain View	1	2,700	1	...	...	...	4
Mount Poso	5	3,461	2	97	2	...	5
Round Mountain	4	903	1	22	...	...	3
Wheeler Ridge	...	.....	...	34	...	...	...
Total	31	49,387	25	4,053	8	19	44
Coastal—							
Capitan	...	.....	...	1	...	...	...
Elwood	1	415	1	43	...	...	3
Goleta Gas Field	...	.....	...	...	...	...	1
Rincon	1	100	1	34	...	...	...
San Miguelito	...	.....	2	2	...	...	2
Santa Barbara	3	475	1	9	1	...	7
Santa Maria	...	.....	...	162	1	...	...
Summerland	...	.....	...	63	...	1	...
Ventura Avenue	5	6,216	5	156	...	...	4
Ventura-Newhall	4	355	11	438	6	6	2
Watsonville	...	.....	...	7	...	...	...
Total	14	7,561	21	915	8	7	19
Southern—							
Coyote	2	2,728	2	87	1	...	2
Dominguez	5	5,522	3	56	1	1	7
Fullerton	...	.....	...	356	...	...	...
Huntington Beach	6	6,481	4	392	...	7	11
Inglewood	...	.....	1	216	...	...	...
Lawndale	1	50	...	7	...	...	1
Long Beach	21	5,628	21	957	3	10	19
Los Angeles-Salt Lake	...	.....	...	189	...	56	...
Montebello	...	.....	1	154	...	...	1
Newport	...	.....	...	...	...	...	...
Playa Del Rey	4	401	2	197	5	15	3
Potrero	...	.....	...	12	2	1	...
Richfield	1	220	...	161	...	2	4
Rosecrans	...	.....	1	63	...	...	...
Santa Fe Springs	...	.....	...	511	2	3	...
Seal Beach	...	.....	...	104	...	3	...
Torrance	...	.....	...	383	...	2	...
Whittier	...	.....	...	139	...	1	...
Miscellaneous	...	.....	26	...	32	...	18
Total	40	21,030	61	3,986	46	104	66
State total	85	77,978	107	8,954	62	130	129

*Monthly average.

FIELD OPERATIONS BY MONTHS FOR FIRST HALF 1933

1933—	Wells completed No.	Wells completed Bbls. dly.	Wells Drlg.	Wells Prod'ng	Abandoned Drlrs.	Abandoned Prodrs.	New rigs
January	13	8,582	98	8,948	9	23	17
February	19	17,109	117	8,953	6	27	23
March	10	9,392	108	8,940	6	8	13
April	14	22,315	104	8,912	16	16	22
May	19	17,405	103	9,023	14	12	27
June	11	5,374	114	8,949	11	24	27
Total first half year 1933	85	77,978			62	130	129
Total first half year 1932	95	63,235			114	84	113
Total first half year 1931	167	188,750			119	98	150
Total first half year 1930	379	297,950			143	151	431
Total first half year 1929	472	706,362			134	118	765

Bradford Crude May Be Shipped to Pittsburgh

OIL CITY, Pa., July 22.—The Derrick says a considerable movement of Bradford crude to the Pittsburgh district is anticipated in the near future and will bring about a new channel of transportation and commerce in the Pennsylvania Grade industry.

The National Transit Co. has filed a joint tariff with Southwest Pennsylvania Pipe Lines for movement of Pennsylvania crude to Neville Island, at a tariff of 18.75 cents per barrel to become effective August 1. This is 11¼ cents lower than the current tariff and indicates that some business must be anticipated. The plant of the Gulf Oil Corp. is located at Neville Island and producers have reasons to believe that some large Bradford producing interests have closed a crude contract with the Gulf for supplying them with crude from the Bradford area.

Rumors have gone so far as to mention that a five-year contract has been secured and for 1,500 bbls. daily movement.

OIL WORKERS CAUTIONED

Drillers, tool dressers and other oil workers are cautioned against going to the Bradford or Allegany Fields, in northern Pennsylvania and southwestern New York in the hope of finding work. While there has been a revival of operations in these districts, there are yet many skilled oil workers living there who have not yet been provided with jobs. Recently men have gone to Bradford from West Virginia and Ohio and have been turned away, and letters have been received from as far away as Wyoming. In some way the word got out that the drilling boom had resumed in the two big fields. A few years ago when crude was selling at $4.50 per barrel several hundred strings of tools were running in the two fields drilling water intake wells and oil wells. The bottom fell out of the market and the field has been produced under curtailment ever since and little drilling has been done.

ADOPT NAMES FOR FIELDS

The San Antonio Geological Society has adopted the following names for recently discovered oil fields in Southwest Texas: North Dale for the Ogden and Reed area in southwestern Bastrop County; North Kohler for the Shasta-Peters area of west central Duval County; Cuevitas for the Sun area in northwest Starr County; Greta for north central Refugio County; and Raisin for the Stoneleigh area of west central Victoria County.

DEATH OF C. W. HANFORD

NEW YORK, July 22.—Charles W. Hanford, for the past 20 years associated with the Ingersoll-Rand Co. and well known in petroleum engineering circles, died suddenly here this week of a cerebral hemorrhage at his home, 65 East Fifty-third Street, at the age of 50. Born in Chicago, Mr. Hanford was graduated from Harvard in 1897, and entered the employ of the Pennsylvania Railroad. He later was associated with Spang-Chalfant & Co. before becoming identified with the Ingersoll-Rand organization.

DEATH OF A. F. MILLAN

A. F. Millan, formerly a supply man, contractor and oil producer at Mannington, W. Va., died at Tampico, Mexico, July 14, where interment was made. Mr. Millan had been associated with Pritchard Supply Co. at Mannington and later with Oil Well Supply Co. at Tampico. He retired from active participation in the oil business about five years ago. He was a veteran of the Spanish-American War, having attained the rank of captain; was past president of the American Chamber of Commerce, of the Colonial Club and of the American School Association at Tampico. He had been ill health for more than a year. Mr. Millan was about 65 years of age and is survived by his wife and his son, Franklin, of Detroit, Mich.

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WORLD'S FAIR INFORMATION BUREAU

MOTOR TO THE WORLD'S FAIR

An automobile trip to the World's air will cost 1¾ cents a mile for gas- oline, lubricating oil and greasing jobs, -third of a cent a mile for each person five in the car.

t housing and parking facilities are avail- ad on the outskirts of, Chicago. en major Federal or state highways, all radiating in all directions from Chicago, been designated as official i's Fair routes. Each of these arked for a distance of 75 miles a Chicago with a gayly colored a, symbolic of one of the major hibits at the Exposition. The map ows routes and markings.

Official Information On each of these official routes, 20 miles from Chicago, is an attrac- tive booth marked "Official Infor- mation Booth." Here the visitor may obtain direc- tions on how to reach any point in Chicago as well as all information regarding living accommodations and rates in the city

If the motorist plans to stop at a motor village all information will be given him as to locations, prices, etc. When he reaches the village he will find clean and sanitary accommodations at a rate approximating $1 a day per person.

Provision has been made for parking cars under guard, for cooking facilities, baths and supervised playgrounds for children.

Motor Villages Chicago is encircled by a ring of mo- tor villages. Those meeting require- ments of the Exposition bear a blue and white badge marked "Motor Village Approved by A Century of Progress, Chicago." These villages will accommodate as high as 5,000 persons per night each. The largest are arranged in form of apart- ment buildings, each apartment with private bath, toilet and lavatory. They have every hotel facility and convenience, being completely furnished and cleaned daily and all linens changed daily. Rapid transportation facilities are available from these villages to gates of the Fair. They have fire and police protection.

The Chicago Motor Club, 66 East South Water St., Chicago, has a list of all motor villages with detailed information as to service and facilities of each

Rooms in hotels range from $1.50 to $5 per day. Rooms in private homes, boarding houses and resi- dential hotels average $1 to $2 per night single, and $1 to $3 double.

There are not any special restrictions on automo- bile drivers in Chicago. All out-of-state licenses are recognized and no licenses for drivers are required of visitors.

Charges at the Fair Admission to the Fair Grounds is 50 cents for adults, 25 cents for children. This admission covers 85 per cent of the $25,000,000 represented in the Exposition ex- hibits, and includes 85 exhibitions buildings and 82 miles of exhibits.

Admission to the concessions or amusements—60 in number—ranges from 10 to 50 cents apiece. Meals are obtainable in the Fair Grounds with sandwiches costing 5 and 10 cents each.

Never have such elaborate arrangements been made for caring for children. A 5-acre tract called En- chanted Island, or official children's playground, is a veritable story-book fairyland with nurses and attendants to care for children while the parents are viewing sights of the Fair Amuse- ments include a magic mountain, min- iature zoo, children's theater, trained animals and clowns, fairy princesses, giants, and everything else to delight the youngster

Ample parking facilities are available at the Fair Grounds. One lot will accommodate 7,000 cars.

THIS FOLDER

Display this Sign - at Your Stations . . .

The response of oil companies to the plea for a "Motor-to-Chicago" drive has become national in scope. A few weeks ago the railroads had the field to themselves. Today many leading oil companies are aggressively doing their part towards popularizing the idea of driving to Chicago by automobile.

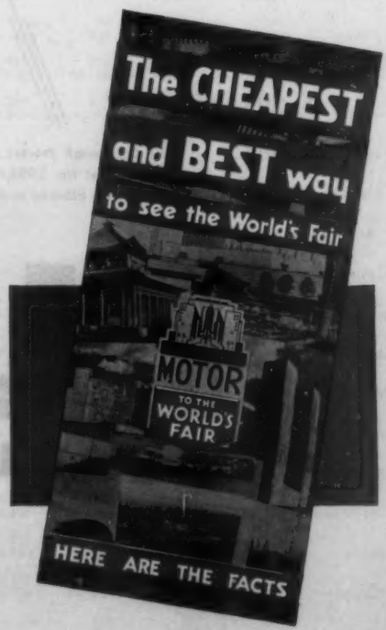
For the industry to fail to develop this opportunity to the utmost would be nothing short of willful blindness and folly. A check made last month on one highway leading into Chicago showed an increase of out-of-state automobiles, as compared with June a year ago, of nearly 400%. And consumption of gasoline in the United States last month increased 1,662,000 barrels over June, 1932.

These two facts are related. But this is only a start.

We have made it as simple as A. B. C.'s, for you to take part in this campaign. If you will simply order the station sign and information folder shown here and begin distribution of this folder through your stations, you will then be doing your part in an effective way. We have just filled a single order for 2,000,000 of these folders, and an oil company executive of international reputation writes us:

> "You are to be commended on your initiative in taking up the cause on behalf of the oil industry as a whole, and I think the effort deserves the co-operation of the various marketing companies. We are heartily in sympathy with the idea and are willing to further the program by distributing the leaflets you are preparing and by hanging the posters at our service stations."

We are at your service in this matter. Write us and we will be glad to advise you fully of the assistance we are prepared to render.



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Care of The Oil and Gas Journal, TULSA, OKLAHOMA.

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With the recovery of all the lubricating oil by the Coubrough Process, there remains only asphalt, a clean, uncracked asphalt of any predetermined specification, including zero.

The possibilities of the Coubrough Process and the results accomplished with it to date well merit your investigation. Complete data upon request.

*The Coubrough Process is covered by U. S. Patent No. 1,905,156 and other patents allowed and pending.

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PETROLEUM REFINING PLANTS

Important Discoveries in Gulf Coast Area Mark First Six Months' Work in That Big Region

By NEIL WILLIAMS
Staff Correspondent, Gulf Coast Fields

The intensive exploratory and wildcatting play which began on the Gulf Coast with the opening of the Conroe Field late in 1931 and gained impetus during 1932 has indicated no abatement this year. On the other hand, the activity, which has drawn many companies and operators, both large and small, from all parts of the country, has become even more widespread. Additional new fields have been opened; many other prospective areas have been exploited and further possibilities have been brought to light for potential crude reserves of the future. Out of this the groundwork has been laid for a drilling program of wide scope which is expected to be carried on over several years to come.

What was done on the Gulf Coast during the first six months of this year can be summarized as follows:

1. Hundreds of thousands of acres of prospective oil land were leased in the most competitive general play ever witnessed.

2. Geophysical operations were carried on over a wide territory not only in the rechecking of many of the older fields and prospects but also in the search for other domes or structures which may previously have been passed over in the light of less efficient instruments or lack of proper interpretation of findings.

3. The Conroe Field reached the peak of its development after the proving up of a productive area of approximately 15,000 acres, now fairly well defined on all sides. The field, which gave prominence to the Cockfield horizon and proved the incentive for one of the greatest trend plays on record, has not been equaled to date on the coast for size, potential recovery or desirability of crude and conditions.

Three New Fields Opened

4. Three entirely new fields were opened. Two of these, Tomball and Greta, have indications of becoming of major importance. Each is in its infancy so far as development is concerned but intensive drilling programs are obligated and outlined for them. The third new field, known as Colita, is located in Victoria County, and is typical of most of the other fields which have been opened in that part of the coastal district. Little can be said of it at this time as only one well, a wet gasser, has been completed and it has been shut in, and no new drilling has been started. It is on a controlled block of approximately 4,000 acres and offers little in the way of competitive drilling.

5. Indications of production and the opening of additional new fields were shown in a half dozen other areas, among which were Pure Oil Co.'s prospect at Louise and Shell Petroleum Corp.'s prospect at Lake View, both in Wharton County. At East Stratton Ridge, Brazoria County, a thousand-barrel well was brought in by Amerada Petroleum Corp. and Rycade Oil Corp., but this went to water. At Carlos, Grimes County, a small gasser was completed, the first production in the county, but this also showed water and the well has been killed to deepen. A short-lived gasser was completed on the Nursery block in northern Victoria County, where several years ago some oil was swabbed from a deep hole drilled by Humble Oil & Refining Co.

Pools Extended

6. Important extensions of production were made at East Hackberry, Manvel, Hankamer, Iowa, Thompson, as well as at Conroe and a number of fields, both old and new.

7. Salt was drilled into for the first time at three geophysical fields, namely Cameron Meadows, Cameron Parish, Louisiana; Darrow, Ascension Parish, Louisiana, and Esperson, Liberty County. Production already had been proved up on each of them.

8. Due largely to the Conroe Field, where an active development program resulted in the completion of a rapid succession of new wells, production on the coast was increased materially, being 5,349,193 bbls. greater than for the preceding six-month period, 9,642,343 bbls. more than for the first half of 1932, and lacking only 1,788,832 bbls. of equaling the peak for any half year, which was the last six months in 1930. Total output for the first half of this year was 34,193,647 bbls.

9. Also due mainly to Conroe, there was a very conspicuous increase in number of completions. Total completions for the first half of this year were 787, of which 574 were producers. For comparison there were 521 completions, 314 producers, the last six months of 1932, and 360 completions, 185 producers, the first half of that year. A curtailment of development put into effect at Conroe beginning in March, coupled with a temporary general slackening of drilling during April, May and early June, prevented a greater increase in completions.

Exploring New Areas

10. Actual drilling activity, except at Conroe, was confined chiefly to wildcat prospects and the more recently discovered fields. At Thompson, High Island, Iowa and Manvel consistent development was kept up. At Barbers Hill a half dozen or more rigs were constantly in operation and some good wells were completed but most of these were workovers or old wells being deepened and for the most part it can be said that work on the older domes, except occasional tests, was at a standstill.

Playing a Trend

Although there was hardly a part of the Gulf Coast which did not figure in some kind of a leasing, geophysical or wildcat drilling play, the most activity was that which centered around the Tomball-Huffsmith district in northern Harris County, and which spread along the "trend" through northern Harris and southern Montgomery Counties and into northern Waller County. This play, which was vindicated in May by the proving of production in the completion of Magnolia Petroleum Co. and Humble Oil & Refining Co.'s No. 1 Kobs, J. M. Hooper Survey, as an oil well in the Cockfield horizon, gave a new perspective into the importance of prospective coastal fields. Almost from the start this area was looked upon as proven territory, lease and royalty values climbed to proven acreage prices before a barrel of oil was found and even after a series of deep dry holes were drilled, which ordinarily might be looked upon as condemning the territory.

The incentive for the Tomball play was the encountering of sizable gas showing in a wildcat drilled by Indian Hill Oil Co. in October of 1932, located some 8 to 10 miles northeast of where the production has been opened. As the well was on the so-called "Conroe trend" and only about 20 miles to the southwest of Conroe, with the showings in the Cockfield horizon, in which are the producing sands of that field, and with everyone confidently expecting another Conroe, very

Gulf Coast

Daily Average and Monthly Production First Six Months of 1933

Texas

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
ALLEN:							
Daily average	11	10	10	10	1	11	
Month	347	286	316	305	32	333	1,619
ARIOLA:							
Daily average	65	68	65	74	201	91	
Month	2,010	1,902	2,010	2,210	6,237	2,727	17,096
BARBERS HILL:							
Daily average	20,969	23,050	22,573	21,944	21,760	21,978	
Month	650,933	645,408	699,767	656,321	674,562	659,344	3,984,435
BATSON:							
Daily average	753	652	672	716	683	792	
Month	23,492	18,252	20,830	21,484	21,171	23,760	128,989
BIG CREEK:							
Daily average	1,138	1,130	1,084	1,032	1,002	1,055	
Month	35,274	31,642	33,608	30,955	31,060	31,643	194,182
BLUE RIDGE:							
Daily average	981	717	741	693	653	730	
Month	30,419	20,073	22,979	20,787	20,392	21,889	136,539
BRENHAM:							
Daily average	57	41	34	30	34	38	
Month	1,763	1,144	1,056	910	1,050	1,148	7,071
BOLING:							
Daily average	387	374	387	372	349	386	
Month	11,991	10,478	11,991	11,152	10,813	11,553	67,978
BUCKEYE:							
Daily average	327	.....	1,265	.....	276	2,185	
Month	10,139	.....	39,213	.....	8,552	65,559	123,463
CEDAR BRAKE:							
Daily average	13	40	40	54	51	50	
Month	407	1,126	1,248	1,622	1,583	1,496	7,481
CLAY CREEK:							
Daily average	1,017	913	971	977	1,007	955	
Month	31,523	25,562	30,107	29,310	31,219	28,657	176,378
CONROE:							
Daily average	24,337	26,632	36,332	40,994	74,675	65,061	
Month	754,449	745,692	1,126,296	1,229,815	2,314,920	1,951,835	8,123,007
DAMON:							
Daily average	617	671	719	712	781	843	
Month	19,121	18,783	22,281	21,358	24,217	25,282	131,042
ESPERSON:							
Daily average	1,328	1,461	1,326	1,416	1,541	1,426	
Month	41,160	40,906	41,100	42,472	46,845	42,763	255,246
FANNETT:							
Daily average	304	357	324	330	326	314	
Month	9,428	9,999	10,040	9,905	10,102	9,406	58,880
GARWOOD:							
Daily average	.....	.....	.....	.....	.....	55	
Month	.....	.....	.....	.....	.....	1,639	1,639
GOOSE CREEK:							
Daily average	3,507	3,154	3,228	3,208	3,436	3,229	
Month	108,717	88,318	100,062	96,246	106,518	96,854	596,715
HANKAMER:							
Daily average	1,736	1,659	1,585	1,846	1,675	1,622	
Month	53,818	46,455	49,130	55,384	51,920	48,651	305,358
HIGH ISLAND:							
Daily average	5,582	5,131	6,655	7,134	7,149	7,966	
Month	173,046	143,664	206,307	214,018	221,613	239,039	1,197,687
HOCKLEY:							
Daily average	.....	54	135	62	48	34	
Month	.....	1,510	4,189	1,854	1,482	1,032	10,067
HULL:							
Daily average	5,055	4,956	4,776	4,778	5,074	4,707	
Month	156,792	138,762	148,052	143,336	157,298	141,232	885,462
GRETA:							
Daily average	.....	.....	.....	.....	52	615	
Month	.....	.....	.....	.....	1,608	18,451	20,059

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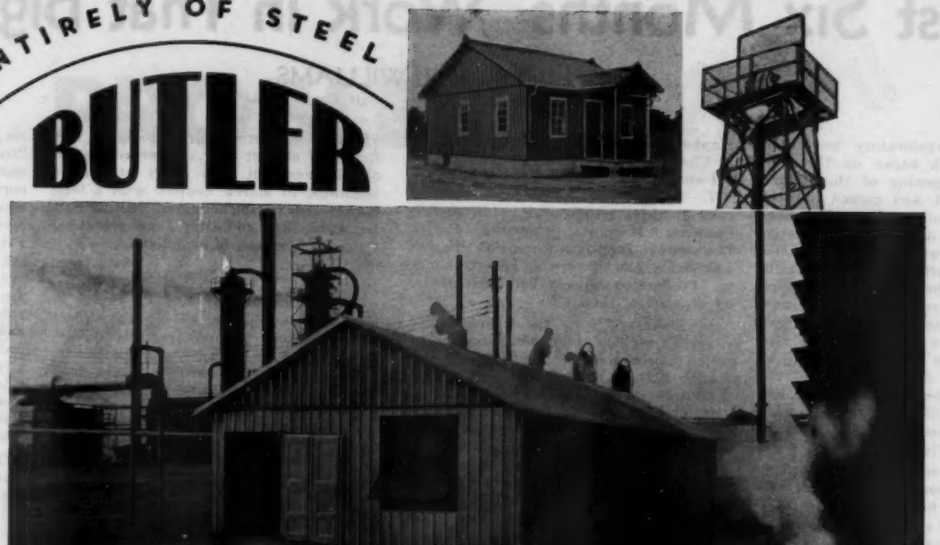

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little incentive was needed to set things going.

As early as 1928 geophysical work had been done in that area and the block on which the field has been opened has been under lease from then by the Vacuum Oil Co., and since the merger of that company with the Magnolia Petroleum Co., by the latter company. After the showings made in the Indian Hill test, Humble Oil & Refining Co. and others went into the district and did considerable additional geophysical work, which was followed by the immediate leasing by Humble of approximately 9,000 acres adjoining the Magnolia's 10,000-acre block. Since then the Texas Co., Shell Petroleum Corp., Stanolind Oil & Gas Co., Gulf Production Co. and many others have acquired considerable holdings.

GULF COAST

Texas

Summary of Field Operations

Field—	Comp.	Prod.	Abd.	Gas
Ariola	2	0	2	0
Barbers Hill	27	22,041	8	0
Batson	5	600	3	0
Big Creek	1	10	0	0
Blue Ridge	1	717	0	0
Buckeye	2	3,850	0	0
Clay Creek	5	50	4	0
Conroe	376	682,576	12	1
Damon Mound	10	467	2	0
Esperson	6	530	2	0
Fannett	2	0	2	0
Garwood	2	400	1	0
Goose Creek	1	100	0	0
Greta	2	550	1	0
Hankamer	1	185	0	0
High Island	8	5,340	1	0
Hockley	1	350	0	0
Hull	16	4,565	7	0
Humble	7	345	1	1
Keeran	2	630	0	0
Liberty	2	300	0	0
Livingston	7	1,790	5	0
Lost Lake	2	0	2	0
Manvel	6	3,405	2	0
Markham	3	730	0	0
McFaddin District	6	204	3	1
Moss Bluff	3	0	3	0
Mykawa	1	100	0	0
Nash	1	25	0	0
Orange	3	25	0	0
Orchard	1	0	1	0
Pierce Junction	11	4,285	2	0
Port Neches	2	30	1	0
Raccoon Bend	5	2,304	0	0
Refugio	2	220	0	0
Saratoga	7	245	0	0
Sour Lake	2	175	1	0
Spurger	5	0	4	1
Stratton Ridge	2	2,000	0	0
Sugarland	1	50	0	0
Thompson	57	62,689	4	0
Tomball	3	2,000	2	0
West Columbia	3	1,790	1	0
Miscellaneous	75	0	72	3
Total 1st. 6 mos. 1933.	685	805,663	147	7
Total 1st 6 mos. 1932.	269	83,014	131	7
Difference	416	722,649	16	0

Louisiana

Cameron Meadows	1	0	1	0
Choctaw	1	0	1	0
Darrow	1	40	0	0
Edgerly	4	135	3	0
Gueydan	2	311	1	0
Hackberry (East)	14	4,223	9	0
Hackberry (Old)	2	0	2	0
Iowa	5	2,670	0	1
Jennings	6	930	4	0
Lake Barre	6	5,435	1	0
Lake Pelto	1	0	1	0
Lake Washington	2	125	1	0
Leesville	3	3,328	1	0
Lockport	6	3,830	1	0
Port Barre	8	6,341	1	0
Sorrento	3	0	3	0
Starks	3	1,400	3	0
Sulphur	8	7,276	5	0
Vinton	4	31	3	0
White Castle	1	0	1	0
Miscellaneous	21	0	21	0
Total 1st 6 mos. 1933.	102	36,075	58	1
Total 1st 6 mos. 1932.	91	53,054	46	1
Difference	11	16,979	12	0
Total Gulf Coast 1933.	787	841,738	205	8
Total Gulf Coast 1932.	360	136,068	177	8
Diffeence	427	705,670	28	0

Completions by Months

Month—	Comp.	Prod.	Abd.	Gas
January	128	141,113	32	1
February	130	133,168	39	2
March	177	191,911	54	1
April	135	151,152	20	1
May	129	129,429	30	2
June	98	94,965	30	1
Total 1st 6 mos. 1933.	787	841,738	205	8

Tomball Discovery

The discovery well, Magnolia Petroleum Co.'s No. 1 Kobs, one of two tests started simultaneously by that company upon leases which were about to expire, came in May 19 estimated good for 2,000 bbls. daily from sand at 5,500 feet. The other well, No. 1 Martens, located approximately 3½ miles north, found salt water in the sand, was deepened to a total depth of 7,438 feet, where it later was abandoned, marking what is considered as the north limit. Before completion of the discovery well, an undivided half interest in Magnolia's block was acquired by Humble Oil & Refining Co. for $1,000,000. The latter company about the same time also purchased all the holdings of the Standard Oil Co. of Kansas, totaling approximately 1,100 acres, and since then has been consistently augmenting its holdings with additional purchases.

Pipe Line Outlets

Upon completion of the discovery well both Humble Pipe Line Co. and Magnolia Pipe Line Co. started construction of pipe line outlets, Humble laying a stub from the field to Satsuma on its trunk line, and Magnolia laying its line to Conroe, where it ties into that company's trunk system to Beaumont. Stanolind Pipe Line Co., whose trunk line to the coast runs almost through the field, will provide a third outlet. That company also has announced it will lay a new 10-inch line from the field, paralleling the old line to its present terminus at Sinco on the Houston Ship Channel, to Baytown, where that company's oil will be handled by Humble Oil & Refining Co.'s refinery pending completion of Pan American Refining Co.'s new plant at Texas City.

Magnolia and Humble have jointly launched a drilling development program on their Tomball holdings, which already has resulted in the addition of a second producer, an offset to the discovery well, and two gas wells. Additional operations have been started by Stanolind Oil & Gas Co. and Amerada Petroleum Corp., Continental Oil Co. and others, and it is anticipated as many as 60 rigs will be running there in the near future.

Early predictions estimated the size of Tomball would equal that of Conroe but later developments, including the drilling of a number of outlying dry holes, and information revealed by the completed wells, would indicate a field of somewhat lesser importance. However, there is no doubt that Tomball is the most important field which has been opened in the Cockfield sand play and in the Conroe trend since the discovery of Conroe itself.

Livingston Development

Development at Livingston, in southern Polk County, which was opened for production in the Cockfield late last year and which at first was played for a major area with acreage and royalty values being boosted almost on a par with those at Tomball so far has proved a little disappointing, according to opinion of some of the companies. At the opening of the year, the only well in the field was the discovery well, a wet gasser. Since then, two oil producers, offsets, located about three-quarters of a mile southeast of the discovery well, have been completed but these were not as large as expected, and with a dry hole to the north of the discovery well and a water well to the west it looks as though the producing area will be comparatively small and general interest in that district has subsided.

Along the trend westward from Conroe, the Garwood district in southern Colorado County, where last year Coyle-Concord Oil Co. brought in a large wet gasser indicating the existence of a sizable field, also has not developed into anything of particular importance as yet. A well drilled by Plymouth Oil & Gas Co. and located a mile southwest of the discovery gasser, was brought in last month as a 400 or 500-bbl. well in a sand at 6,203 feet but quickly went to water. Efforts to shut off the water and place the well back on production have met failure and the hole now is being deepened. Humble Oil & Refining Co., which purchased a half interest in 10,000 acres of the Coyle-Concord 20,000-acre block, drilled a deep dry hole a mile northwest of the gasser and now is drilling another test southwest of the gasser as a diagonal northwest offset to the Plymouth well.

Spurger, eastern Tyler County, another of the new fields opened along this trend last year, has had several additional tests

Texas (Continued)

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
HUMBLE:							
Daily average	5,792	5,269	5,218	5,236	5,163	5,162	
Month	179,550	147,537	161,753	157,082	160,059	154,856	960,837
KEERAN:							
Daily average	284	270	256	228	163	309	
Month	8,808	7,565	7,930	6,847	5,057	9,274	45,481
LIVINGSTON:							
Daily average	.....	.....	.....	.....	165	871	
Month	.....	.....	.....	.....	5,110	26,142	31,252
LOST LAKE:							
Daily average	301	281	284	278	249	239	
Month	9,334	7,863	8,804	8,344	7,713	7,167	49,225
MANVEL:							
Daily average	431	548	573	506	1,840	2,273	
Month	13,365	15,340	17,769	15,180	57,048	68,175	186,877
MARKHAM:							
Daily average	1,470	1,471	1,147	1,214	1,145	983	
Month	45,575	41,183	35,551	36,410	35,495	29,509	223,714
McFADDIN:							
Daily average	.....	.....	.....	61	87	52	
Month	.....	.....	.....	1,825	2,699	1,566	6,089
MOSS BLUFF:							
Daily average	73	58	40	19	.....	.....	
Month	2,261	1,626	1,245	563	.....	.....	5,695
MYKAWA:							
Daily average	367	228	370	423	532	216	
Month	11,373	6,380	11,478	12,686	16,496	6,489	64,902
NASH:							
Daily average	132	201	169	102	52	104	
Month	4,096	5,625	5,237	3,064	1,618	3,112	22,752
NORTH DAYTON:							
Daily average	147	114	129	180	130	135	
Month	4,553	3,198	3,993	5,405	4,035	4,139	25,323
ORANGE:							
Daily average	1,148	1,091	1,029	943	963	844	
Month	35,584	30,548	31,895	28,296	29,851	25,335	181,509
ORCHARD:							
Daily average	1,490	1,174	995	984	940	862	
Month	46,196	32,870	30,840	29,510	29,145	25,881	194,442
PIERCE JUNCTION:							
Daily average	5,862	5,345	5,398	4,690	3,777	4,334	
Month	181,728	149,669	167,332	140,708	117,089	129,705	886,231
PORT NECHES:							
Daily average	1,502	1,254	961	994	926	988	
Month	46,560	35,117	29,794	29,822	28,702	29,647	199,642
RACCOON BEND:							
Daily average	4,570	4,526	4,497	4,593	4,511	4,486	
Month	141,675	126,723	139,409	137,797	139,847	134,571	820,022
REFUGIO:							
Daily average	7,556	7,035	7,072	6,957	6,733	6,132	
Month	234,238	196,985	219,230	208,700	208,721	184,002	1,251,876
ROCKLAND:							
Daily average	15	12	12	10	10	12	
Month	460	339	372	304	320	357	2,152
SARATOGA:							
Daily average	810	841	749	880	898	865	
Month	25,115	23,549	23,211	26,408	27,834	25,940	152,057
SOUR LAKE:							
Daily average	1,224	1,221	1,221	1,181	1,359	1,373	
Month	37,940	34,186	37,857	35,433	42,127	41,182	228,725
SOUTH LIBERTY:							
Daily average	827	798	966	773	730	735	
Month	25,631	22,340	29,940	23,197	22,328	21,767	145,193
SPINDLETOP:							
Daily average	3,519	3,307	3,540	3,354	3,161	3,311	
Month	109,085	92,598	109,746	100,622	97,997	99,343	609,391
SUGARLAND:							
Daily average	7,792	7,515	7,542	7,524	7,527	7,483	
Month	241,550	210,410	233,808	225,716	233,333	224,495	1,369,313
STRATTON RIDGE:							
Daily average	.....	.....	.....	.....	224	108	
Month	.....	.....	.....	.....	6,940	3,249	10,189
THOMPSON (Rabbs Ridge)—							
Daily average	9,487	9,008	14,301	16,632	16,492	16,241	
Month	294,099	252,226	443,337	498,969	511,258	487,235	2,487,124
TOMBALL:							
Daily average	.....	.....	.....	.....	16	109	
Month	.....	.....	.....	.....	492	3,284	3,776
WEST COLUMBIA:							
Daily average	3,022	3,480	3,614	4,004	3,699	3,682	
Month	93,684	97,445	112,030	120,124	114,665	110,463	648,411
Daily average Texas Gulf Coast	126,013	126,117	143,085	148,048	182,231	176,038	150,510
Total Texas Gulf Coast	3,906,389	3,531,284	4,433,143	4,441,436	5,649,173	5,281,147	27,242,592

(Continued on Next Page)

drilled this year but all have been dry and to date the discovery wet gasser is the only producer and the area has been pretty well defined to the north, west and southwest.

Conroe Trend Not Consistent

The fact that the fields to date along the Conroe trend, with the exception of Conroe, have not materialized as had been expected has not lessened the interest in leasing along the trend. It is generally believed that additional fields will be opened along it and that the Cockfield horizon will prove out the Gulf Coast's most prolific producer.

The Greta Pool

What has the earmarks of being another important field was opened at Greta, Refugio County, in the lower Gulf Coast country. There, Greta Oil Corp.'s No. 1 O'Brien, E. H. Winfield Survey, came in the middle of May flowing an estimated 500 bbls. daily from sand at a total depth of 4,404 feet. The sand was identified as being in the lower Oligocene. The oil has a very desirable lub base and is comparable to that produced from the 3,700-foot horizon of the Refugio Field, although the sands are not the same. The discovery well has turned out an unusually consistent producer.

The prospective acreage was cut up into small tracts, many of them only 25 acres, and owned by numerous independent operators, and following completion of the discovery well there was started a rush to drill on these with location being made in the corners in such way as to compel an intense line fight drilling program. However, in the meantime the Railroad Commission has placed into effect regulations limiting the development to one well in 20 acres, resulting in drilling being placed on a more orderly basis. Two bad blowouts from a sand around 2,200 feet stressed the need of spacing restrictions.

Since the opening of the field, two additional good oil producers have been completed, one located 2,300 feet northwest of the first well, and the other 1,200 feet southwest. The depths of all are within a few feet of each other, and this fact, together with information obtained by correlation of a 2,200-foot sand encountered fairly uniformly in other tests, indicates a flat structural condition of large extent, possibly greater than the Refugio Field, located 9 miles southwest. As this is written, 15 rigs are operating in the area, including one a key test 2½ miles north of production and another at Vidauri, a mile and a half farther north.

Greta's Pipe Line Outlet

Although only independents were in the Greta play at first, Atlantic Oil Producing Co., Texas Co. and Continental Oil Co. since have acquired important holdings. Atlantic Pipe Line Co. now is extending its Refugio line to the new field to provide a pipe line outlet. Greta fits very nicely in Atlantic's picture. Due to the decline of production at Refugio to around 7,000 bbls. daily, that company's line from Refugio to tidewater at Harbor Island has much excess capacity. The line was built during the peak of Refugio's development and is capable of handling as much as 50,000 bbls. daily.

Greta is one of an almost straight line of fields which have been proved up along a trend extending from White Point through Saxet, Refugio, Fox (4 miles north of Refugio), Humble's O'Connor Pool, McFaddin and Keeran. Refugio so far has been the only one to become of major importance. O'Connor, McFaddin and Keeran, however, are made up of large ownerships and are in controlled hands with the result that development is being carried on slowly. A new addition to this line of fields was that opened during May by Stoneleigh Oil & Gas Co.'s No. 1 Terrell in the R. Manchola Survey, 4 miles southwest of Victoria in Victoria County. This wildcat, drilled on a block farmed out by Gulf Production Co., came in as a wet gasser from a sand at a total depth of 4,437 feet. It has been shut in and no additional drilling has been done.

In northern Refugio County, Gulf Production Co. has what looks like another one of this type of field but so far no commercial production has been developed. Its No. 2 O'Connor, C.E.P.&I.M. Survey No. 40, came in as a high pressure gas well in sand at 5,705-07 feet, but was shut in and when reopened made salt water and then was deepened and abandoned. No additional tests have been drilled.

Promise of Numerous Fields

Victoria and Refugio Counties give promise of numerous fields, each with many different sands and sand lenses, but in most cases production is extremely spotted, uncertain and hazardous.

The Conroe Field, Montgomery County, which has been the dominant field in Gulf Coast history, reached its peak of development during the first three months of this year. Since the middle of March there has been a steady decline in operations and now there are only approximately 45 rigs in active work. The decline was due to a voluntary curtailment of drilling by three of the larger companies in the field and also to the fact drilling programs on most of the smaller leases were being completed. A total of 376 wells was completed in the field during the first six months, making a grand total of approximately 500 producers on July 1. Under the program of development with most of the field being drilled one well to 20 acres it has been figured that when completely drilled there will be between 750 and 800 wells. As active drilling at Conroe did not begin until August of 1932, Conroe has gone on record as being one of the most rapidly drilled up fields in history.

Conroe's Production

Production from the Conroe Field totaled 8,123,007 bbls. for the six months as compared with the total of 2,449,645 bbls. for the entire year 1932. Up to July 1, the maximum daily allowable which the field has been permitted to run at any time was 65,000 bbls. Due to confusion which arose among operators along the eastern and southeastern margin of the field where two different horizons, the main Conroe sand and the Upper Cockfield sand, were found productive, a number of wells were permitted to produce unrestrained. The Upper Cockfield sand had been ruled as a separate field and as production of those wells known to be producing from that sand had not totaled 10,000 bbls., as specified by law, no production restrictions could be placed upon those wells. However, because of the uncertainty of determining which wells were in which sand, the two horizons being encountered at approximately the same depth in that area, offsets to Upper Cockfield wells and others in the vicinity also were permitted to flow unrestrained, this resulting in a material boost in the output for the field at that time. Since then the commission has ruled that, although the sands are separate horizons, there is intercommunication between them and that both are producing from a common reservoir, and in view of this all wells now have been placed on the same proration basis.

Laying of an 8-inch line by Tide Water Oil Co. from Conroe to Humble to connect with the Texas Pipe Line Co.'s Humble-Port Arthur system, and another by Channel Transport & Marketing Co. to Norsworthy on the Houston Ship Channel gave Conroe four pipe line outlets. Two other outlets are furnished by Humble Pipe Line Co. and the Texas Pipe Line Co., which laid lines out of the field in 1932.

Wharton County Prospects

At Louise, in Wharton County, Pure Oil Co. has what looks like another new coastal field. That company's No. 1 Stewart, Morris & Cummings' Survey No. 25, first test on the prospect, which was discovered in geophysical exploration in 1928, encountered a sand in the Frio at 5,963-71 feet, which on drill stem test recovered 17 fourbles of 38 gravity oil in 20 minutes. Although confident of being able to make a well, the hole was carried

(Continued on Page 125)

Louisiana

Daily Average and Monthly Production First Six Months of 1933

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
ANSE LA BUTTE:							
Daily average	55	55	49	47	47	31	
Month	1,700	1,545	1,511	1,415	1,459	942	8,572
BLACK BAYOU:							
Daily average	673	649	628	646	529	474	
Month	20,867	18,177	19,462	19,384	16,392	14,220	108,502
CAMERON MEADOWS:							
Daily average	159	45	50	48	50	51	
Month	4,922	1,267	1,557	1,436	1,555	1,523	12,261
CHOCTAW:							
Daily average	311	294	280	268	256	250	
Month	9,647	8,230	8,685	8,046	7,930	7,487	50,025
DARROW:							
Daily average	.....	.....	.....	.....	.....	35	
Month	.....	.....	.....	.....	.....	1,044	1,044
EDGERLY:							
Daily average	156	154	155	160	129	109	
Month	4,832	4,318	4,801	4,802	3,997	3,281	26,031
GUEYDAN:							
Daily average	592	490	431	412	443	408	
Month	18,358	13,726	13,366	12,350	13,739	12,238	83,777
HACKBERRY (Old):							
Daily average	914	974	717	626	668	548	
Month	28,338	27,274	22,223	18,775	20,702	16,441	133,753
HACKBERRY (East):							
Daily average	7,268	6,301	4,490	4,535	3,829	4,393	
Month	225,304	176,423	139,198	136,055	118,696	131,959	927,635
IOWA:							
Daily average	2,482	2,409	4,018	7,501	7,825	8,611	
Month	76,946	67,450	124,554	225,038	242,570	258,327	994,885
JENNINGS:							
Daily average	860	823	852	924	1,410	1,294	
Month	26,665	23,041	26,414	27,724	43,716	38,806	186,366
LAKE BARRE:							
Daily average	7,940	9,180	9,070	10,627	10,196	9,509	
Month	246,148	257,045	281,175	318,800	316,074	285,276	1,704,518
LAKE PELTO:							
Daily average	60	58	57	54	45	58	
Month	1,865	1,620	1,761	1,616	1,395	1,755	10,912
LAKE WASHINGTON:							
Daily average	284	370	268	167	159	374	
Month	8,808	10,350	8,306	5,002	4,923	11,227	48,617
LEESVILLE:							
Daily average	643	469	245	1,514	1,693	1,021	
Month	20,982	13,132	7,598	45,424	52,489	30,617	169,342
LOCKPORT:							
Daily average	3,199	2,812	3,520	3,665	2,314	2,369	
Month	99,161	78,730	109,120	91,945	71,738	68,980	518,774
PORT BARRE:							
Daily average	2,609	2,189	3,363	3,829	4,067	3,563	
Month	80,877	61,296	104,250	114,877	126,071	105,976	592,447
SORRENTO:							
Daily average	45	51	49	41	28	44	
Month	1,390	1,423	1,513	1,227	864	1,316	7,733
STARKS:							
Daily average	1,427	987	848	772	1,041	1,122	
Month	44,230	27,631	26,284	23,152	32,277	33,589	187,272
SULPHUR:							
Daily average	842	927	1,481	1,913	2,467	3,298	
Month	26,106	25,953	45,914	57,386	76,473	98,549	330,781
SWEET LAKE:							
Daily average	590	558	548	545	511	508	
Month	18,296	15,628	16,982	16,345	15,849	15,240	98,340
VINTON:							
Daily average	3,883	3,587	3,485	3,540	3,277	3,254	
Month	120,340	100,430	108,037	106,201	101,581	97,616	634,205
WELSH:							
Daily average	51	50	50	50	50	49	
Month	1,581	1,404	1,553	1,505	1,555	1,469	9,057
WHITE CASTLE:							
Daily average	507	495	491	456	480	466	
Month	15,711	13,850	15,220	14,570	14,876	13,992	88,219
Daily average Louisiana Gulf Coast	35,554	33,927	36,145	41,770	41,514	41,685	38,299
Total Louisiana Gulf Coast	1,102,184	949,943	1,089,483	1,253,076	1,286,922	1,250,561	6,932,169
Daily average total Gulf Coast	161,567	160,044	173,150	189,818	223,745	221,730	188,810
Total first six months 1933	5,008,573	4,481,227	5,522,626	5,694,532	6,936,095	6,531,707	34,174,761
Total first six months 1932	4,178,761	3,722,633	3,988,104	4,902,141	4,415,869	4,244,365	24,551,304
Total first six months 1931	5,598,347	4,836,692	5,081,815	5,354,911	5,499,710	4,881,373	31,422,135
Total first six months 1930	5,881,489	5,619,270	6,106,265	5,980,067	6,131,740	6,214,648	35,982,479
Total first six months 1929	4,344,233	3,959,613	4,586,507	4,705,904	4,673,923	4,484,434	26,754,614
Total first six months 1928	3,796,856	3,552,290	3,796,516	3,760,253	4,155,544	4,114,796	23,276,495
Total first six months 1927	5,232,364	4,409,580	4,837,581	4,420,560	4,762,127	4,612,630	28,274,834
Total first six months 1926	3,023,877	2,329,503	2,934,583	2,842,050	3,208,721	2,842,970	17,779,409

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WICHITA, KANSAS, U. S. A.

World's Largest Oil Field Suffered Six Months of Overproduction and Low Crude Prices

By L. E. BREDBERG
Fort Worth Bureau, The Oil and Gas Journal

The accompanying report on operations for the first six months of 1933 will show a decided change in activities under the previous six months' or year's activities. There were only 913 wells completed in the entire district, including the East Texas Field, a great decrease from the first and last six months in 1932. Eighty-three tests were abandoned as dry holes, 46 of which were wildcats.

Hopkins, Henderson, Cherokee, Upshur and Rusk Counties showed the largest number of wildcat tests put down. There were 6 dry holes abandoned in each of the first three counties named, 8 in Upshur and 13 in Rusk. Several of those abandoned in Rusk were on the edge of the East Texas Field, while a couple of those abandoned in Cherokee were also drilled for production on the edge, but failed. Seven tests were abandoned in Van Zandt County, the majority of which were in the shallow Nacatosh sand area north of the Van Field, and on the edge of that field.

Wildcatting slowed up during May and June in the district with no signs of it being revived to any great extent during the coming three or six months unless crude prices are increased, which will have an incentive to expand exploration work for other Woodbine sand fields in the many counties located on the east side of the State.

Slowing Up in East Texas

There are only about 20 wells being completed in the East Texas Field every week, with new locations being held down. With over 10,300 wells in the field, drilling activities from now on will advance but slowly. A former rapid drilling campaign, coupled with low prices during the six months, resulted in a low rate of field drilling during the fore part of 1933. While drilling slowed up, companies and operators turned their attention to equipping their wells for pumping, this activity being brought on by the showing up of more salt water on the west side of the field, and also because of an overdecline of bottom hole pressures caused by high withdrawals during four of the six months.

Companies and operators will continue to install pumping equipment during the next six months and year as pressures continue to decline and more wells refuse to respond when "kicked off" each day to make their daily quota of production under the daily allowables set by the commission. There are now over 600 pumping and salt water wells in the East Texas Field, and during the end of the next six months this number is expected to be at least doubled, especially if production is not held to the present allowlowable of 548,000 bbls. or under. If the Federal Government takes a hand in production and oil transportation, as now appears certain, the rapid decline in pressures may be checked because of holding production to around market demand.

Prices for crude oil fell to as low as 10 cents per barrel in East Texas during the past six months, raising back to 25 cents, then to 50 cents, the prevailing posted price on June 30. With the field producing over a million barrels per day at a time when consumption was low, prices went sliding to the 10-cent bottom. However, they were not long held at that price, gradually working back up as demand seemed to warrant the taking of more oil from the field, storage being filled in the field, on the Gulf Coast and Atlantic Seaboard with the cheap commodity.

On January 1 a new proration order went into effect in the field, giving wells a basic allowable of 26 bbls. per day, with 40,000 more barrels per day to be distributed among the wells on bottom hole pressure plans, making a top allowable of 290,000 bbls. per day.

On March 21 the Railroad Commission raised the allowable from 290,000 bbls. to 400,000 bbls. Operators had been producing around 150,000 bbls. per day more than the allowable. The new order regulated well production on a per well basis, sand thickness and bottom hole pressure, combining permeability, porosity and saturation. This new order was soon attacked and a Federal court injunction obtained against it.

On April 3 another hearing on East Texas was held at Austin. The commission considered opening all wells in the field to make potential tests, but Capt. J. F. Lucey of the Lucey Petroleum Corp. and others asked for a Federal injunction to prevent such action, which was granted the complainants.

Conditions in the field continued to grow worse until April 6 when the entire field was shut down for two weeks to allow the taking of potential tests on some 300 key wells. Two-hour tests were made on these wells, the Federal court granting the commission permission to make such a test. This was the second time the field was shut down in three and one-half months, it having previously been shut in during the latter part of December, 1932, for two weeks.

The average well in the field was considered as having a potential of 12,360 bbls. per day, as a result of the potential tests taken. A later test taken the following month showed a decline in potentials of around 11 per cent, while the bottom hole pressures fell nearly 4 per cent in that time, and during the large producing period, when around 1,000,000 bbls. per day was coming out of the field.

Oil at a Dime per Barrel

During this period of high production some 3,000,000 bbls. of steel storage was erected or planned for construction in the field, some of the operators and royalty owners running their production to storage instead of selling it at 10 cents per barrel as posted by the Texas Co. on April 24, which followed the new 750,000-bbls. daily allowable granted the field a few days before the price slash. The Magnolia Petroleum Co., alone, retained a 25-cent price when all others cut to 10 cents. The other purchasers later came up to 25 cents, where it was "pegged" until June 14, when it was raised to 50 cents per barrel.

Overproduction during the two months, coupled with the 10-cent price, caused many of the operators to shut in their wells, electing to allow offsets to produce and drain their properties rather than sell the high gravity crude at such a low price. Hundreds of tank car loads of oil were shipped out of the field, some of them having no market destination and piling up at Gulf Coast and other points where demurrage caused a loss in profits on most of such transported cheap oil.

On May 8 a Federal court hearing on the 750,000-bbl. order, and an attack by Rowan & Nichols, Hunt Production Co. and others ended in a decision for the Railroad Commission, the first decision granted that body by the Federal court in regard to proration order attacks. The decision still stands although the daily allowable was cut back to 10 per cent of the wells' potentials on June 14, making a daily allowable of around 548,000 bbls. at the present time.

This new allowable came after the June 12 hearing at Austin by the commission. New potential tests were taken the fore part of June in order to secure more data for the June 12 hearing. Results of these tests were mentioned above.

Crude Demand Increased

Purchasing companies continue to solicit more connections in the field and the crude oil market has been increasing in strength during the past two months in the field. The gasoline market, however, is now weakening, due to the fact that many of the 49 refineries in the field have considerable stocks of gasoline in storage at their plants, stocks which they have threatened to dump on the market if they cannot find an outlet for it at the present higher prices. If such a move was made it would probably disrupt the present market and hurt conditions materially.

During the fore part of the year many

East Texas

Daily Average and Monthly Production First Six Months of 1933

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
JOINER:							
Daily average	97,761	112,297	162,976	111,095	288,778	234,851	
Month	3,030,591	3,144,311	5,052,256	3,332,847	8,952,115	7,045,400	30,557,660
KILGORE:							
Daily average	109,039	123,330	176,086	104,317	303,641	275,477	
Month	3,380,209	3,453,244	5,458,659	3,129,510	9,412,875	8,264,315	33,098,812
LONGVIEW:							
Daily average	136,605	144,429	220,305	148,463	417,986	253,293	
Month	4,046,755	4,044,019	6,844,957	4,453,890	12,957,555	7,598,785	39,947,964
Daily average	337,405	380,056	559,367	363,875	1,010,405	763,210	572,400
Total first six months 1933	10,459,555	10,641,574	17,355,872	10,916,250	31,322,545	22,908,640	103,604,436
Total first six months 1932	10,257,192	8,988,703	10,141,772	10,659,801	10,707,333	9,997,238	60,752,039
Total first six months 1931	110,515	701,739	2,900,925	7,479,756	9,658,710	10,680,539	31,532,184

East Central Texas

Daily Average and Monthly Production First Six Months of 1933

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
BOGGY CREEK:							
Daily average	1,050	965	924	913	850	880	
Month	32,555	27,025	28,958	27,395	26,365	26,411	168,699
CURRIE:							
Daily average	769	163	164	153	151	157	
Month	5,233	4,568	5,080	4,595	4,997	4,707	29,182
MEXIA:							
Daily average	2,556	2,501	2,495	2,471	2,446	2,419	
Month	79,057	70,022	77,340	74,120	75,820	72,566	448,925
POWELL:							
Daily average	2,727	2,765	2,759	2,778	2,749	2,331	
Month	84,539	77,425	85,523	83,342	85,215	69,930	485,974
RICHLAND:							
Daily average	32	32	32	31	32	30	
Month	990	890	1,027	937	998	913	5,755
SATIN:							
Daily average	30	23	20	19	10	11	
Month	935	640	628	565	315	324	3,407
VAN:							
Daily average	42,018	52,417	52,614	52,442	52,499	52,356	
Month	1,302,554	1,467,672	1,631,038	1,573,266	1,627,461	1,570,669	9,172,660
WORTHAM:							
Daily average	136	133	125	157	118	119	
Month	4,219	3,720	3,879	4,708	3,658	3,566	23,760
Daily average	48,712	58,999	59,144	58,964	58,865	58,302	57,118
Total first six months 1933	1,510,082	1,651,962	1,833,473	1,768,931	1,824,829	1,749,086	10,338,363
Total first six months 1932	1,495,327	1,536,106	1,704,902	1,663,745	1,765,831	1,817,113	9,982,024
Total first six months 1931	1,249,782	1,185,856	1,455,154	1,503,956	1,689,453	1,787,686	8,877,881
TOTAL EAST TEXAS AND EAST CENTRAL TEXAS:							
Total first six months 1933	11,969,637	12,293,536	19,189,345	12,685,181	33,147,374	24,657,726	113,942,799
Total first six months 1932	11,752,519	10,523,809	11,846,674	12,322,546	12,473,164	11,814,351	70,734,063
Total first six months 1931	1,360,297	1,887,595	4,356,079	8,989,706	11,348,163	12,468,225	40,410,065
Total first six months 1930	649,628	678,455	813,799	1,030,567	1,194,501	1,229,886	5,616,731
Total first six months 1929	875,921	879,471	866,549	605,389	608,505	577,820	3,713,775
Total first six months 1928	797,384	727,284	780,967	727,455	736,122	706,249	4,475,461
Total first six months 1927	1,479,568	898,208	1,442,554	1,254,690	1,066,028	1,032,720	7,673,768
Total first six months 1926	1,936,551	759,548	1,832,614	1,763,970	1,702,853	1,557,780	10,536,616
Total first six months 1925	5,276,936	518,416	4,585,917	4,111,490	3,863,375	3,379,740	27,138,834

injunctions were obtained by and against the commission, the latter by refiners and operators who desired to produce their wells and operate their pipe lines and refineries without interference. Such injunctions were granted until the Federal court's decision at Fort Worth, as mentioned above. This forbade operators from producing in defiance of the commission's orders. One pipe line company had formerly obtained an injunction to prevent the state authorities from going onto its property and checking storage tanks, records and pipe line runs, but this was rescinded later.

The commission tried to prevent the railroads from transporting any oil not accompanied by a tender approved by the commission. It also tried to prohibit the spotting of tank cars at loading racks, sidings or other points where oil was being loaded unless a tender had been approved by the commission showing the source of the oil. The railroads immediately obtained a Federal court injunction to prevent such interference by the commission, saying that such a move would interfere with interstate shipments and was unconstitutional.

Conditions grew worse and worse during the first four months of the year; more by-passes were uncovered, all kinds of schemes were devised and used to overproduce and transport such oil, and the commission was powerless to cope with the situation, having no penalties to assess a producer or transporter when found violating its orders.

Landowners, operators and royalty owners in the district met many times at various places to discuss the chaotic situation confronting them, and appealed to state officials and even to President Roosevelt to do something to prevent overproduction as then raging. The legislature and senate were petitioned to set up a new conservation body, an appointive board, but the bill failed and the present three members of the Railroad Commission continue to legislate on oil and gas matters.

The senate and house of representatives of Texas passed a bill making it a felony to produce oil in excess of the commission's orders, but the governor vetoed the bill. It will, however, go into effect September 1, after the 90-day delay accorded such legislation. This should have a good effect on production, the commission then having plenty of power and a penalty to assess violators of its orders.

Officials and representatives of all major producing and transporting companies met in Fort Worth for a two-day session, March 13 and 14, going on to Austin to meet with the legislative members of the State. However, the trip proved of no avail, conditions continuing as before, if not worse.

Checking Up on Bad Gasoline

The attorney general's department sent a couple of assistants to Longview early in the year in an effort to quell some of the overproduction by bringing charges and receiverships against violators, and the comptroller's department sent several men to check tax evasions. The latter checked refineries, gasoline trucks and other sources of evasion, and as a result the State is now receiving several times the amount of taxes on gasoline sales that it was getting before this move was made.

A chemist was also sent to the field to run tests on gasoline at the refineries, in trucks and in service stations, and much inferior motor fuel was discovered going out of the district. Suits were instigated in regard to tax evasion and inferior motor fuel, a move which has eliminated a part if not all of this trouble to the industry.

The attorney general's department instituted many receivership actions, but the Sixth Court of Civil Appeals at Texarkana ruled against such actions, taking away one of the Stat's methods of penalizing violators.

The Railroad Commission held a farcical two week's hearing the fore part of the year regarding overproduction and transporting of excess oil, but nothing came of the hearing, which was adjourned January 21. A later hearing was held by a legislative committee chosen to investigate the work of the Railroad Commission in East Texas. This hearing also apparently had no effect on conditions or on the commission.

On January 31 a new order went into effect in regard to well spacing in the East Texas Field. This order allowed drilling of wells 660 feet apart or stipulated that they should be at least 330 feet from property lines. Such a ruling would place one well to each 10 acres instead of one to each 20 acres as before. However, such regulations were given little attention and many wells have been drilled on much less acreage, the commission having been accused, time and again, for granting too many permits for drilling.

Dynamiting of tanks, pipe lines and wells were reported frequently, these assaults having been made to discourage violators from carrying on their clandestine operations in the field. It seemed to have little effect.

A vigilante association was organized during the middle of May to help investigate violations and report them to the commission, the majority of this band being landowners and operators in the field who were in position to ascertain violations and to know the violators. This association has an office in Longview and has been active during the past three months on this work, co-operating with the commission.

During the middle of February the Sinclair Prairie Oil Co. announced that it would pay current posted price for all "back allowable" oil. The operators had to prove that such oil was produced in complance with the commission's orders before the company would take it.

Bates & Underwood were given Federal court permission to produce back allowable oil. This permission eventually caused considerable trouble in the field, many operators seeking permission from the commission to produce what they termed back allowable oil. Independent operators and companies alike sought many such permits until the amount reached such proportions that it was causing much excess oil to be thrown on the market. Operators would obtain such permits and then take advantage of them by running more oil than the permits granted. The commission then rescinded the back allowable order for one month, beginning July 1, which should be of great assistance in helping to curb overproduction, the field men having much better chance of tracking down violations when the production of back allowable oil was removed from the daily amounts granted under the regular proration order.

Another factor in the overproduction game in the field is the producing of several shallow wells, drilled between 700 and 800 feet, in the Ferguson Survey in western Gregg County. One small company obtained an injunction to prevent the commission from interfering with producing its two shallow wells as it desired, and to obtain equity another small company with offset wells had to make the same move. There are six such wells producing in this area. The oil is said to be coming from the Woodbine sand up through a faulty casing in a nearby well and seeping into the Carrizo water sand to which the shallow wells are drilled. The wells are producing several thousand barrels per month, with large amount of fresh water. The companies have a market for the oil at below the posted price. The commission ordered the faulty casing remedied, but so far it apparently has not been done.

Van Pool, Van Zandt County

More wells were put on the pump in the Van Field in Van Zandt County during the past six months, and several dry holes have been drilled within the pool on the edges. However, efficient operation of the pool will make it produce the maximum. The field is now producing around 47,000 bbls. per day, the allowable being 42,500 bbls., granted by the Railroad Commission after the Pure Oil Co., the major producer and operator of the pool, obtained a Federal injunction against the commission because the company wanted 10,000 more barrels per day from the field in January and the commission would not grant the increase. The commission maintained that the company should help out the situation in East Texas and take more oil from that area instead of from the Van Pool.

There has been considerable activity just to the north of the Van Pool during the past three months. Several tests have been put down to test the Nacatoch sand horizon. There are three small wells producing from this sand, but the majority of the tests proved dry, some of them going on to the Woodbine and proving dry in that horizon.

Gardner Brothers of Dallas drilled a Trinity sand test to the northwest of the Van Pool, but that test also proved dry, ruining chances for production from that horizon in the Van area.

The first well drilled to the Nacatoch sand was Peden & Olson's on the Brannon farm in the J. Goodman Survey. It was located 4,000 feet north and a little west of the nearest Woodbine sand producer of the Van Pool. The Nacatoch sand was logged from 1,241-50 feet. The well made around 25 bbls. per day. The other two producers in the area are also small producers.

Several more tests are slated to be drilled in this shallow sand area within the next two or three months. However, little can be expected from this sand in the area.

EAST CENTRAL AND EAST TEXAS
Summary of Wells Completed in First Six Months of 1933
Completions by County

County—	Comp.	Prod.	Abd.	Gas
Anderson	2	0	2	0
Angelina	2	0	2	0
Bowie	2	0	2	0
Cherokee	6	0	6	0
Ellis	2	0	2	0
Franklin	3	0	3	0
Freestone	1	0	1	0
Gregg	390	36,542	4	0
Henderson	6	0	6	0
Hill	3	0	3	0
Hopkins	6	0	6	0
Hunt	1	0	1	0
Lamar	1	0	1	0
Leon	3	0	3	0
Morris	1	0	1	0
Rusk	365	31,464	13	1
Smith	29	1,410	5	0
Titus	2	0	2	0
Upshur	63	3,053	8	0
Van Zandt	20	1,540	7	0
Wood	5	0	5	0
Total	913	53,999	83	1

Completions by Months

Month—	Comp.	Prod.	Abd.	Gas
January	270	14,650	17	0
February	171	9,509	10	1
March	137	8,125	9	0
April	104	7,217	9	0
May	125	7,891	22	0
June	106	6,607	16	0
Total 1st 6 mos. 1933.	913	53,999	83	1
Total 1st 6 mos. 1932.	2,823	211,937	101	5
Difference	1,910	157,938	18	4

Note—The initial production figures given in the above table represent only the total quantity of oil produced mostly on short time gauges when the wells came in. The East Texas Field being under proration throughout the period, the wells were not permitted to flow a full 24 hours' production when such production would exceed the allowable of the well. The gauges ran all the way from a few minutes up to 24 hours.

Wildcatting in East Texas

The Jamestown area of Upshur County was one of the most interesting wildcat areas of the district during the past six months, especially after Wadley, Lyons, Taubel and others, operators in this area, drilled in their No. 1 Shettlesworth in the James Dunn Survey. It topped the sand at 3,722 feet, deeper than the Woodbine is found in the main field 4 miles to the south, consequently the area was "dubbed" a separate and distinct field. The well made around 75 bbls. per day; however, it later showed up a vast amount of salt water. Six other tests in the area proved dry, condemning the area as far as major importance is concerned.

The Buffalo structure and block near Centerville, in Leon County, was one of the most closely watched areas during the fore part of the year when the Shell Petroleum Corp., operating and testing the block for the associated companies and operators, drilled a test which had two exceptionally good saturated streaks of sand, neither of which produced any oil, calling for the final abandonment of the test. It was cored to a total depth of 6,305 feet, then plugged back to the upper saturated streaks, the best of which was found at 6,054-58 feet. Several tests of the streaks failed to bring a producer for the area. The associated companies are now drilling a second test on this block, 2 miles to the west.

Bateman and others are also drilling an interesting test in this county, south and west of Buffalo and the above mentioned tests. It is now getting down to an interesting depth and will be closely watched for showings found in the Shell test to the northeast.

Meyers' No. 1 Olson in the Gibson Survey, Henderson County, created much excitement during the fore part of the year, when it was reported to have cored saturated sand, but this was later considered as erroneous information for the test never revealed any oil and was finally abandoned at 4,321 feet. Another test was drilled nearby, but it also proved a "duster." Total depth was 4,105 feet.

One of the deepest tests drilled in the district was put down by the Loring Oil Co. on the Swearingen farm in the Oliver Lund Survey, Cherokee County. This test went to 5,400 feet before it was plugged.

Kentucky Almost at a Standstill in First Half of Year, But Revival Is Promised

Field work in Kentucky took a heavy drop during the first half of 1933, compared with 1932, there being a decline of 140 completions, 3,815 bbls. in initial production, 24 less dry holes and 32 less gas wells. Daviess County led in completions for the first half of 1933 with 33,626 bbls. production and 19 dry holes, while Ohio County accounted for 20 completions, 1,114 bbls. production, 10 dry holes and 2 gas wells.

Indications are that the last half of 1933 will show an increase in completed wells, as work is increasing in the State. Much interest is being manifested in Western Kentucky by operators who have never "played" that country, as well as by the experienced Kentucky oil men. It is attractive to wildcatters with small capital, and if conditions in the oil business improve and prices are made more attractive the territory will receive consideration in the next few months.

KENTUCKY FIELDS
Summary of Wells Completed for First Half of 1933

Month—	Comp.	Prod.	Dry	Gas
January	19	249	7	2
February	9	724	6	0
March	9	942	4	1
April	4	155	2	0
May	18	280	9	0
June	18	327	10	0
First half 1933	77	2,677	38	3
First half 1932	217	6,513	63	35
Difference	140	3,816	24	32

Summary by Counties

County—	Comp.	Prod.	Dry	Gas
Ohio	20	1,114	10	2
Daviess	33	626	19	0
McLean	3	60	3	0
Barren	1	20	0	0
Hancock	4	35	1	0
Henderson	2	60	0	0
Muhlenberg	20	10	1	0
Knox	1	700	0	0
Hart	1	0	0	1
Allen	4	2	3	0
Warren	1	0	1	0
First half 1933	77	2,677	38	3

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Several New Pools Opened in Oklahoma in First Half of Year, One a Major Development

By W. A. SPINNEY
Staff Correspondent, Oklahoma Fields

During the first half of 1933, the Oklahoma legislature passed a new proration law, that has enough teeth in it to make violators subject to heavy fines and imprisonment. It was necessary to enact such a law because of the almost continuous court procedures during the last four years attacking the old proration law and the method of administering it.

A number of new pools were found in the State during the half year. Pools were opened in Pontotoc, Seminole and Creek Counties.

During the first half of 1933 a new proration law was passed by the state legislature. The enforcement of the law was placed in the hands of the Oklahoma Corporation Commission. They appointed a state umpire and an assistant and five deputy umpires. These newly appointed proration officials took office on April 17.

The bill became a law when Governor Murray signed it on April 10. It provided for heavy fines and imprisonment for violators. It defines waste, both economic and underground, equitable taking of oil from pools as well as leases in the State. The Corporation Commission has the authority of making all the orders, rules and regulations, and all petitions must be given 10 days' publication before hearing. Salaries of all proration officers was provided in the act. The expense of administering the proration law will be paid by Oklahoma producers who are subject to a tax of one-eighth of 1 cent per barrel of oil produced, the proceeds of which will be paid into the proration fund provided by the new proration law.

Producers in the Oklahoma City Field had the usual hectic time during the first half of the year. The field was shut in by executive order on March 4 for a period of 10 days. It was shut in on account of the fact that some companies were alleged to have been overproducing. The Wilcox sand wells in the field were again shut in on April 1 until April 17. New potentials taken on all the wells showed a 50 per cent decline from the previous potential taken in November, 1931.

New Production Peak

A new peak in production for the Oklahoma City Field was reached on March 4 when it was estimated the field made 354,554 bbls. of oil in 24 hours, from 273 of the nearly 1,000 wells then in the field. The previous highest daily gauge was 353,403 bbls. on July 7, 1931.

Development work in the Oklahoma City Pool was slowed down during the first part of the year. There are 1,024 oil wells in that area, and it is believed to be about all drilled up.

The Wentz Pool, in Noble County, was the only important field that was brought onto production during the first half of the year. This field was discovered in September, 1932, but the second well was not completed in that area until January, 1933, giving added interest in the area. In May a gusher well was completed on the west side of the field. The discovery well in the area was drilled on a unitized block of 2,160 acres. Companies joining the unit operation included Shell Petroleum Corp., Gypsy Oil Co., Carter Oil Co., Sinclair Prairie Oil Co., L. H. Wentz, Twin State Oil Co., Empire Oil & Refining Co. and Phillips Petroleum Co. These companies form what is known as the Lucien Consolidated Community.

The second well to produce from the Wilcox sand was the Lucien Consolidated Community's No. 1 Jerome, C SW SW, Section 8-20-2w. It flowed 1,115 bbls. of oil in 24 hours from the Wilcox sand at 5,184-5,306 feet.

The third well in the area was 2½ miles southeast of the discovery well. It was the Stanolind Oil & Gas Co. and Amerada Petroleum Corp.'s No. 1 Kolb, C NE NW, Section 33-20-2w. The well made 640 bbls. of oil in 24 hours from the Wilcox sand at 5,075-5,107 feet.

The completion of these wells in the Wentz Pool resulted in additional locations and the Sinclair Prairie Oil Co.'s No. 1 Jerome, SW cor., Section 15-20-2w, about 1½ miles east of the discovery well, was the first dry hole to be completed in the area. It found water in the Wilcox sand at 5,152-56 feet.

During the first six months of this year on account of short term leases, nine wells were started in the Wentz Pool area, and five wells were completed. The five oil wells including the discovery well, had a potential production of 19,000 bbls. a day on June 30. All of these wells were shut in awaiting a pipe line outlet which is being constructed into the area. This pool is expected to be granted an increased allowable, as the purchasing companies have nominated 12,000 bbls. a day from this field.

The finding of a large well on the west side of the pool, in May, 1933, removed the Wentz Pool from the secondary group of areas in the State to a major producing field. At the close of the first six months the Wentz Pool is the only future reserve area in Oklahoma. The gusher well was completed after three relatively small wells had been completed in the field. It also extended the producing area a location to the west and many believed it assures the spread of the producing area across Noble County west to the Garfield County line. The well was in the Lucien Consolidated Community's No. 1 Whitten, C SE SE Section 7-20-2w, which is estimated at 10,000 bbls. of oil and 10,000,000 feet of gas per day from the Wilcox sand at 5,168-5,211 feet. The well flowed 498 bbls. of oil the first hour.

Another well that extended production 1½ miles southwest was the Lucien Consolidated Community's No. 1 E. Farr, C NE NE Section 19-20-2w, which flowed 360 bbls. of oil in an hour and a half. This well was given an estimated potential of 6,000 bbls. a day. The best gauge of this well was 1,125 bbls. of oil in four hours. The gas was estimated at 20,000,-

Oklahoma

Daily Average and Monthly Production First Six Months of 1933

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
ADA-ALLEN DISTRICT:							
Daily average	11,976	12,025	12,156	11,915	11,427	11,388	
Month	371,256	336,700	376,836	357,450	354,237	341,640	2,138,119
BRAMAN DISTRICT:							
Daily average	1,690	1,785	1,855	1,512	1,640	1,564	
Month	52,390	49,980	57,505	45,360	50,840	46,920	302,995
BRISTOW-DEPEW DISTRICT:							
Daily average	9,475	8,409	8,437	8,405	8,215	8,174	
Month	293,725	235,452	261,547	253,150	254,665	245,220	1,542,759
SLICK:							
Daily average	2,754	2,812	2,437	2,448	2,156	2,163	
Month	85,374	78,736	75,547	73,440	66,836	64,890	444,823
BURBANK:							
Daily average	10,016	9,185	9,510	9,917	9,911	9,904	
Month	310,496	257,180	294,810	297,510	307,241	297,120	1,764,357
CARTER-KNOX:							
Daily average	1,736	1,716	1,630	1,778	1,670	1,676	
Month	53,816	48,048	50,530	53,340	51,770	50,280	307,784
CEMENT:							
Daily average	2,268	2,192	2,238	2,146	2,069	2,047	
Month	70,308	61,376	69,378	64,380	64,139	61,410	390,991
CHANDLER:							
Daily average	3,147	3,221	2,889	2,831	2,478	2,462	
Month	97,557	90,188	89,559	84,930	76,818	73,890	512,942
CLEVELAND-KEYSTONE:							
Daily average	2,428	2,530	2,374	2,408	2,260	2,344	
Month	75,268	70,840	73,594	72,240	73,160	70,320	435,422
CROMWELL:							
Daily average	5,018	5,049	5,127	5,029	4,918	4,902	
Month	155,565	141,372	158,937	150,870	152,458	147,090	906,285
DEER CREEK:							
Daily average	447	418	449	388	401	389	
Month	13,857	11,704	13,919	11,640	12,431	11,670	75,221
DAVENPORT-KENDRICK-STROUD:							
Daily average	1,622	1,345	1,206	1,383	1,324	1,213	
Month	50,592	37,660	37,386	41,490	39,254	36,360	241,742
DUNCAN DISTRICT:							
Daily average	5,920	5,885	5,604	4,878	5,050	4,987	
Month	183,520	164,780	173,724	146,340	156,550	149,610	974,524
FOX-GRAHAM DISTRICT:							
Daily average	4,378	5,011	4,294	4,205	4,343	4,260	
Month	135,718	140,308	133,111	126,150	134,633	127,800	797,722
GARBER-BILLINGS DISTRICT:							
Daily average	3,743	4,001	3,894	3,824	3,766	3,642	
Month	116,033	112,028	120,714	114,720	116,746	109,260	689,501
HENRYETTA DISTRICT:							
Daily average	2,901	1,943	1,816	1,991	1,904	1,910	
Month	62,931	54,404	56,296	59,730	59,024	57,300	348,785
HEALDTON:							
Daily average	10,416	10,211	10,174	10,017	9,901	9,878	
Month	322,896	285,908	315,394	300,510	306,931	296,340	1,827,979
HUBBARD:							
Daily average	1,838	1,744	1,468	1,466	1,048	982	
Month	56,978	48,832	45,508	43,980	32,488	29,460	257,246
JEFFERSON COUNTY:							
Daily average	1,742	1,833	2,004	2,145	1,962	1,945	
Month	54,188	51,324	62,124	64,350	60,822	58,350	351,158
KEYSTONE:							
Daily average	267	270	248	262	249	251	
Month	8,277	7,560	7,688	7,860	7,719	7,530	46,634
KONAWA:							
Daily average	3,474	3,427	3,222	2,916	2,886	2,140	
Month	107,694	95,956	99,882	87,480	89,466	94,200	574,678
HOLDENVILLE DISTRICT:							
Daily average	1,414	2,574	4,147	1,629	4,496	4,214	
Month	43,834	72,072	128,557	49,170	139,376	126,420	559,429
LOVELL:							
Daily average	334	257	243	232	287	274	
Month	10,354	7,196	7,533	6,960	8,897	8,220	49,160
MARSHALL:							
Daily average	1,739	1,620	1,483	1,595	1,574	1,581	
Month	53,909	45,360	45,973	47,850	48,794	47,430	289,316
MANFORD:							
Daily average	1,440	1,809	1,750	1,654	1,663	1,647	
Month	44,640	50,652	54,250	49,620	51,553	49,410	300,125
MUSKOGEE DISTRICT:							
Daily average	1,402	1,198	1,057	1,210	1,178	1,066	
Month	43,462	33,544	32,767	36,300	36,518	31,980	214,571
NOWATA COUNTY:							
Daily average	4,688	4,742	4,719	4,692	4,666	4,410	
Month	145,328	132,776	146,289	140,760	144,646	132,300	842,099
OKEMAH:							
Daily average	602	640	621	503	553	527	
Month	18,648	17,920	19,251	15,240	17,143	15,810	104,212

(Continued on Next Page)

000 feet a day from the Wilcox sand at 5,122-44 feet.

Keokuk Falls Discovery

The Greater Seminole area, which has been producing for seven years, was the scene of development that resulted in the finding of two new pools. One of the discoveries was on a unit block of 1,200 acres, northeast of the Searight Pool, in Seminole County. The block is located in Sections 35-11-6 and 2-10-6. The discovery well was drilled by the Carter Oil Co., Gypsy Oil Co. and Sinclair Prairie Oil Co. It was No. 1 Community, C N L NW NE Section 2-10-6, south of the community of Keokuk Falls. The well made 2,327 bbls. of oil the first 23 hours from the Misener sand at 4,090-4,106 feet. This well extended the production in the Greater Seminole Field about 5 miles to the north of the Searight Pool. The gas in the well was estimated at 2,000,000 feet a day. The well has been shut in since it took its 10-day production test, immediately after its completion.

The same companies drilled the north offset to this test and after drilling to the Wilcox sand at a total depth of 4,488 feet where the well found water, it was being plugged back to the Hunton lime to test a showing of oil.

The Barnsdall Oil Co.'s No. 1 Deere, SW cor. NW NW Section 36-11-6, in the Keokuk Falls area of Seminole County, which was seeking to extend the Misener sand production in the area, found water in the Wilcox sand and was abandoned at a total depth of 4,393 feet. It was about 1½ miles northwest from the discovery well in the Keokuk Falls area.

Sasakwa Area

Another well that opened a new producing area in the Greater Seminole area was the Stanolind Oil & Gas Co. and Amerada Petroleum Corp.'s No. 1 Palmer, NW cor. Section 36-6-7, near the townsite of Sasakwa, Seminole County. The nearest production to this wildcat was about 2½ miles to the southeast in the Allen Pool. The well flowed 2,525 bbls. of oil in 24 hours from the Wilcox sand at 4,040-51 feet. The first showing of oil was found in the Simpson sand at 4,026 feet where it averaged around 800 bbls. a day. The well was near the townsite of Sasakwa and all of the town lots were leased and a town lot drilling campaign is expected during the last half of the year.

The Palmer well was shut in to 50 bbls. a day during the balance of the first half of the year. It was the only well drilled in the field during the first part of the year, on account of the low crude oil prices and small market demand for the crude.

West Holdenville Development

At the beginning of the new year the West Holdenville Pool, in Hughes County, was extended to the south and west by the Murrah & Bohannon's No. 1 Jacobs, NW cor. SE NE Section 16-7-8. The well made oil at the rate of 40 bbls. an hour and 20,000,000 feet of gas a day, from the Booch sand at 2,860-2,929 feet.

The West Holdenville Field was opened in April, 1932, and it was further developed until it was the most active field in the state.

In January a well on the east edge of the field found a new producing horizon. The well was Milam & Capshaw's No. 1 Holmes, SE cor. SW Section 11-7-8. It made 3,000,000 feet of gas a day from 1,597-1,600 feet.

In February potential tests on 24 wells in the West Holdenville Field showed a total of 19,497 bbls. a day on a four-hour test. The gas volume of the 24 wells under the open flow tests totaled 424,591,000 feet a day.

Sacred Heart Pool Extended

In the Sacred Heart area of Pottawatomie County an extension well swabbed 365 bbls. of oil in 10 hours. The well was Watchorn Oil & Gas Co.'s No. 1 Zoeller, NW cor. SE Section 5-6-5, in the South St. Louis area. This well extended production a quarter of a mile to the south.

A new pool was found in southeastern Pontotoc County in February by W. A. Delaney and others in No. 1 Harden, NE cor. SW Section 30-2-7. The well found the Gilcrease sand at 1,170-85 feet, where it made 30,000,000 feet of gas a day with 505 pounds rock pressure. The 6-inch casing was landed at 1,170 feet. All of the offsets were drilled and completed. The wells are all shut in at this time until market outlet can be found for the gas. A number of wildcats were started in the vicinity of these gas wells, but none had reached a pay horizon on June 30.

New Layton Sand Pool

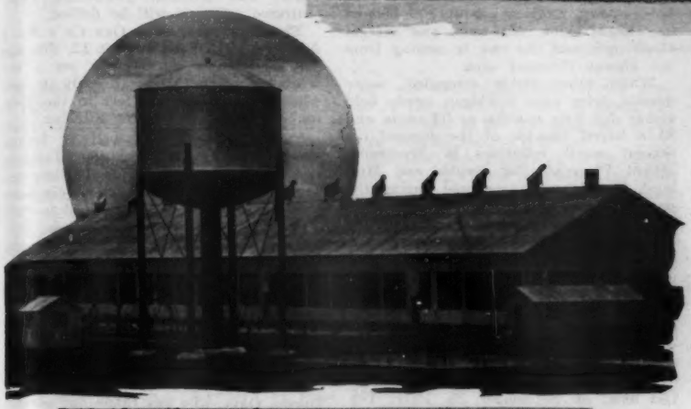
A new pool was discovered in Creek County in Township 18-8, east of the old Cushing Field. The Layton sand yielded several large wells from sand found at 1,200 to 1,300 feet. There were about 10 wells completed in the area during the first six months and some of these were rated from 800 to 1,300 bbls. a day in initial output. The production was not restricted as one purchasing company nominated all the crude oil from these wells.

The largest well completed in the group

Oklahoma (Continued)

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
OKLAHOMA CITY:							
Daily average	100,242	150,110	199,470	102,892	150,554	193,057	
Month	3,107,502	4,203,080	6,183,570	2,986,760	4,667,174	5,791,710	27,039,796
OKMULGEE DISTRICT:							
Daily average	5,058	5,221	4,836	5,016	4,649	4,675	
Month	156,798	146,468	153,016	150,480	144,119	140,250	891,131
OLEAN-RIPLEY:							
Daily average	1,242	1,230	1,156	1,069	1,058	1,042	
Month	38,502	34,440	35,836	32,070	32,798	31,260	204,906
OSAGE (outside Burbank):							
Daily average	16,490	16,406	17,681	17,739	16,181	16,916	
Month	511,190	459,340	548,111	532,170	501,611	507,480	3,059,902
PONCA CITY-BLACKWELL DISTRICT:							
Daily average	2,223	2,205	2,156	2,173	2,161	2,152	
Month	69,378	61,740	66,836	65,190	66,991	64,560	394,695
ROBBERSON:							
Daily average	1,672	1,707	1,511	1,508	1,467	1,470	
Month	51,832	47,796	46,841	45,240	45,477	44,100	281,286
ROGERS COUNTY:							
Daily average	1,451	1,456	1,452	1,459	1,433	1,419	
Month	44,951	40,768	45,012	43,770	44,423	42,570	261,494
PAPOOSE:							
Daily average	1,748	1,670	1,581	1,494	1,379	1,422	
Month	54,188	46,760	49,011	44,820	42,749	42,660	280,188
SEMINOLE FIELD:							
Seminole City—							
Daily average	10,582	10,404	10,277	9,585	9,451	9,973	
Month	328,073	291,312	318,587	287,550	292,981	299,190	1,817,393
East Seminole—							
Daily average	859	867	932	873	852	1,029	
Month	26,629	24,276	28,892	26,190	26,412	30,870	163,579
Bowlegs—							
Daily average	10,635	10,599	10,053	9,040	9,103	9,519	
Month	331,235	296,772	311,643	271,200	282,193	285,570	1,778,613
Little River—							
Daily average	18,350	17,811	17,767	15,576	16,219	15,224	
Month	568,850	498,708	550,777	467,280	505,889	456,720	3,048,224
East Little River—							
Daily average	1,332	1,236	1,246	1,166	1,147	1,182	
Month	41,292	34,608	38,626	34,980	35,557	35,460	220,523
East Earlsboro—							
Daily average	17,169	15,553	15,507	15,225	14,742	15,732	
Month	532,239	435,484	480,717	456,750	457,002	471,960	2,834,152
Earlsboro—							
Daily average	14,280	13,263	12,574	12,974	12,762	11,546	
Month	442,680	371,364	420,794	389,220	395,622	346,380	2,366,060
South Earlsboro—							
Daily average	2,000	1,810	1,767	1,675	1,571	1,382	
Month	62,000	50,680	54,777	50,250	48,701	41,460	307,868
Searight—							
Daily average	2,918	2,682	3,011	2,837	2,632	3,076	
Month	90,458	75,096	93,341	85,110	81,592	92,100	517,697
Mission—							
Daily average	5,926	5,942	5,809	5,532	5,320	4,954	
Month	183,706	166,376	180,079	165,960	164,920	148,620	1,009,661
Carr City—							
Daily average	8,361	8,396	8,114	7,484	7,500	7,822	
Month	259,191	235,088	251,534	224,520	232,500	234,960	1,437,793
Maud—							
Daily average	1,548	1,401	1,565	1,574	1,544	1,513	
Month	47,988	39,228	48,515	47,220	47,864	45,390	276,205
Total Seminole Field							
Daily average	94,021	89,964	88,622	83,551	82,943	82,956	
Month	2,914,651	2,518,992	2,778,282	2,506,530	2,571,233	2,488,680	15,778,368
ST. LOUIS-PEARSON:							
Daily average	18,351	18,597	18,303	17,845	18,402	19,939	
Month	568,831	520,716	567,393	535,350	570,462	598,170	3,360,972
SASAKWA:							
Daily average	1,501	1,407	1,738	1,808	1,391	1,280	
Month	46,531	39,396	53,878	54,240	43,121	38,400	275,566
SHOLEM ALECHEM:							
Daily average	5,995	6,114	6,076	5,987	5,932	5,814	
Month	185,845	171,192	188,356	179,610	183,892	174,420	1,083,315
TONKAWA:							
Daily average	4,930	4,773	4,794	4,783	4,235	4,254	
Month	152,830	133,644	148,614	143,490	134,385	127,620	840,583
WASHINGTON:							
Daily average	3,791	3,803	3,720	3,716	3,644	3,610	
Month	117,521	106,484	115,320	111,480	112,964	108,300	672,069
WEWOKA:							
Daily average	3,910	3,887	3,869	3,263	3,782	3,446	
Month	121,210	108,836	119,939	96,090	117,242	103,380	666,697
YALE-JENNINGS:							
Daily average	3,626	3,495	3,548	3,493	3,385	3,360	
Month	112,406	97,860	109,988	104,790	104,935	100,800	630,779
FISH:							
Daily average	2,611	2,438	2,451	2,616	2,492	2,019	
Month	80,941	68,264	75,981	78,480	77,252	60,570	441,488
TULSA DISTRICT:							
Daily average	4,036	3,559	3,938	3,878	4,017	4,103	
Month	125,116	99,652	122,078	116,340	124,527	123,090	710,803
CUSHING DISTRICT:							
Daily average	13,799	13,890	14,376	14,616	14,684	14,011	
Month	427,769	388,920	445,656	438,480	455,204	420,330	2,576,359
ASHER-WANETTE:							
Daily average	4,550	3,861	3,939	3,638	3,476	3,144	
Month	141,050	108,108	122,109	109,140	107,570	94,320	682,297
MADILL:							
Daily average	[illegible]	197	193	206	173	176	
Month	6,231	5,516	5,983	6,180	5,363	5,280	34,553
HEWITT:							
Daily average	5,547	5,552	5,518	5,010	5,095	5,161	
Month	171,957	155,456	171,058	150,300	157,945	154,830	961,546
GLENN POOL DISTRICT:							
Daily average	4,894	4,850	4,748	4,983	4,716	4,612	
Month	151,714	135,800	147,188	149,490	146,196	138,360	868,748
PERRY DISTRICT:							
Daily average	1,174	1,096	813	699	891	1,045	
Month	36,394	30,688	25,202	20,970	27,621	31,350	172,226
TATUMS:							
Daily average	3,789	3,615	3,915	3,891	3,941	3,945	
Month	117,459	101,220	121,365	116,730	122,171	118,350	697,295
Daily average	404,864	448,964	495,556	290,667	426,186	477,969	442,869
Total first six months 1933	12,550,784	12,570,992	15,455,236	11,720,010	13,521,550	14,339,079	80,157,672
Total first six months 1932	13,664,149	11,806,190	12,998,796	12,718,020	13,169,420	12,767,230	77,113,805
Total first six months 1931	14,850,952	13,531,980	16,627,687	16,815,990	17,322,867	16,678,200	95,828,677
Total first six months 1930	20,802,984	17,977,624	19,116,406	19,541,310	20,587,503	19,754,700	117,779,527
Total first six months 1929	22,575,874	20,464,164	20,838,262	25,325,280	21,345,453	20,861,112	126,020,255
Total first six months 1928	20,975,329	19,294,426	20,162,524	19,096,920	19,443,355	18,482,981	117,455,536
Total first six months 1927	19,035,426	19,752,348	22,480,921	22,208,130	23,258,463	22,830,330	129,565,618
Total first six months 1926	13,674,813	12,392,016	14,312,886	14,468,190	14,507,008	14,073,510	83,428,423

The illustrations reading from the top down show: An Oil Barge, an Elevated Tank at a compressor station, a Bubble Tower, a group of Storage Tanks equipped with Wiggins Roofs, and a Spheroid.



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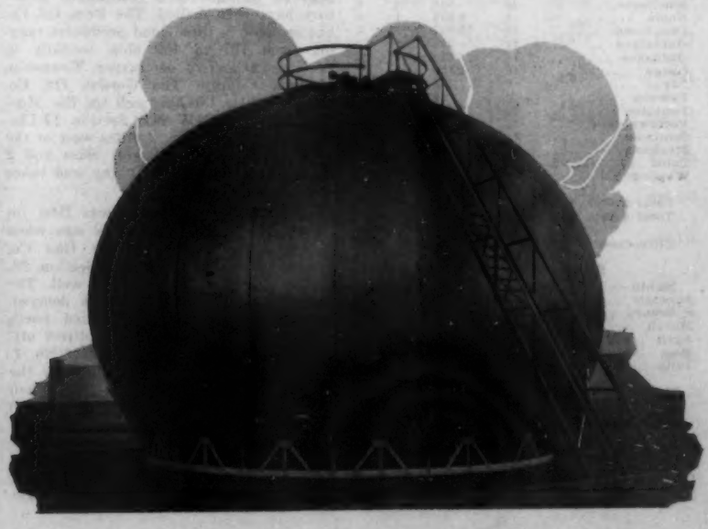
DALLAS	1241 Burt Bldg.	NEW YORK	3147 Hudson Terminal Bldg.
HOUSTON	2919 Main Street	PHILADELPHIA	1615-1700 Walnut St. Bldg.
TULSA	1406 Philcade Bldg.	BOSTON	1517 Consolidated Gas Bldg.
BIRMINGHAM	1536 Fiftieth St. N.	SAN FRANCISCO	1054 Rialto Bldg.
CHICAGO	2128 Old Colony Bldg.	SEATTLE	4323 Smith Tower
DETROIT	1514 Lafayette Bldg.	LOS ANGELES	1423 Wm. Fox Bldg.
CLEVELAND	2204 Rockefeller Bldg.	HAVANA, CUBA	Edificio Abreu 402

Fabricating plants in BIRMINGHAM, CHICAGO and GREENVILLE, PA.



was J. E. Crosbie, Inc.'s No. 2 Escoe, NW cor. NE SW Section 26-18-8, which made 1,300 bbls. on its initial production test for 24 hours, after an 80-quart shot in the Layton sand at 1,312-47 feet.

The Roxana Pool, in Logan County, which has become important since the discovery of the School Land sand with deeper drilling of old producers, was believed to have been defined when the Shell Petroleum Corp.'s No. 6 Sebronck, SE cor. SW NE Section 30-19-4w, found water in the School Land sand at 6,258 feet. The well was drilled to the Siliceous lime at 6,570-6,608 feet, where it was abandoned without finding any showing of oil or gas. This was the first test in the surrounding area to miss oil production in the School Land sand and is located on a lease on which were a number of wells producing from this horizon.

Deepest Drilling Well in State

In January the Denver Producing & Refining Co.'s No. 1 Noe, NW cor. SW SW Section 34-10-10w, a wildcat in the northern part of Caddo County, started spudding. The structure on which the test is being drilled is considered a large one and is estimated by some to be 20 miles long and 10 miles wide and is on the edge of the Anadarko Basin. It was drilling at 9,250 feet at the close of June and is the deepest drilling well in the state. A seismograph was used in working out the structure.

Southern Discovery

In April a new gas pool was discovered about 5 miles northwest of the Tatums Pool, in Carter County. The well was E. M. Boring and Amos Drilling Co.'s No. 1 Riddle, NE cor. NW SW Section 4-1s-3w, which was completed for 30,000,000 feet of gas a day from sand series at 1,820-2,039 feet. The 8-inch casing was cemented at 1,798 feet. It was the only well completed in the area during the first six months of 1933.

A number of wells were completed in the Tatums Pool, in Carter County, the largest completion during the first half of the year being the Samedan Oil Co.'s No. 1 Hopson, SE cor. NE Section 25-1s-3w. It flowed 750 bbls. of oil in 11 hours and was estimated at 2,000 bbls. a day from sand at 2,400-2,591 feet.

OKLAHOMA

Summary of Wells Completed First Six Months of 1933

County—	Comp.	Prod.	Dry	Gas
Atoka	16	31	10	0
Carter	24	4,604	6	1
Comanche	2	5	1	0
Caddo	2	75	1	0
Creek	92	5,485	36	8
Cotton	2	0	2	0
Garfield	1	75	0	0
Grady	1	0	1	0
Haskell	2	0	2	0
Hughes	45	7,025	7	3
Jefferson	14	571	4	1
Kay	3	39	1	1
Kiowa	1	0	1	0
Lincoln	5	1,189	1	0
Logan	3	3,091	1	0
Latimer	1	0	1	0
Marshall	7	35	3	1
McIntosh	3	25	2	0
McCurtain	1	0	1	0
Muskogee	20	168	11	2
Noble	6	3,658	1	0
Oklahoma	10	75,027	2	1
Okmulgee	44	336	22	2
Okfuskee	14	439	2	1
Osage	26	4,123	4	0
Payne	6	761	4	0
Pawnee	9	66	3	1
Pontotoc	29	2,324	10	5
Pottawatomie	32	6,805	7	9
Seminole	21	13,413	6	0
Stephens	34	261	16	0
Tulsa	21	253	11	8
Wagoner	25	425	11	2
Total 6 mos. 1933	522	132,342	192	30
Total 6 mos. 1932	445	320,573	159	57
Difference	77	188,231	33	27

Summary by Months

Month—	Comp.	Prod.	Dry	Gas
January	90	31,547	42	2
February	81	12,149	30	4
March	80	10,198	25	6
April	85	42,049	31	4
May	98	22,339	36	8
June	88	14,000	28	6
First half 1933	522	132,342	192	30
First half 1932	445	320,573	159	57
First half 1931	714	1,431,798	247	117
First half 1930	1,898	2,470,016	524	191
First half 1929	1,740	488,940	618	149
First half 1928	1,821	328,155	657	292
First half 1927	2,305	963,276	727	247
First half 1926	2,545	380,359	789	270
First half 1925	2,486	458,049	721	228

Michigan Field More Active in First Half of 1933 Than in Past Years; Prospects Good

By PAUL A. ELLIOTT

The year 1933 will show the greatest drilling activity since 1929 in proved, semiwildcat and wildcat areas in the State of Michigan judging by the record for the first six months.

A total of 136 permits, or more than half the annual number since 1928 and 1929 when the Muskegon Field was at its height, were issued from January 1, 1933, to June 30, 1933, mostly for the Mount Pleasant Field and the surrounding territory.

During the same period a total of 122 completions were made, 77 of them for oil, 2 for natural gas and 43 dry. Of the oil wells, 71 are located in the Mount Pleasant area, 2 in Oceana County, 2 in Muskegon County, and 2 in Saginaw County, where the first commercial oil field in the State was opened in 1925.

In Greendale and Porter Townships, Midland County, the most extensive pool outside of the original Chippewa-Greendale Pool, with which the Mount Pleasant Field was opened in the spring of 1928, has been developed during the past six months. From present successful wells it is believed to be at least 7 miles and possibly 11 miles long extending in a southeasterly trend from the prolific East Pool opened in July, 1931.

This new area in which more than 25 commercial wells, one of them a 5,000-bbl. initial producer, already have been completed was indicated late in 1932 by the success of the Pure Oil Co.'s No. 1 Mattie Yost and others, W half Section 35-14n-2w, Greendale Township, Midland County, when it came in for 1,155 bbls. natural and was boosted to 2,000 bbls. a day with a shot of acid.

New Field in Porter Township

This was in early December, 1932. It was three months later, or early in March, 1933, before the well which really opened the new field in Porter Township, 11 miles southeast of the original Mount Pleasant producing area, was brought in.

It was the Michigan Pacific Oil & Gas Co.'s No. 2 Joseph Otway, NE SW Section 22-13n-1w. It first made about 150 bbls. a day, but rushed in for an increased flow of 3,207 bbls. when drilled about 35 feet deeper into the Dundee limestone the first week in March.

In four months 20 other producers, the largest of them the Pure Oil Co.'s No. 1 State-Porter, C NW NW SE Section 15-13n-1w, Porter Township, which gauged 190 bbls. in 40 minutes, have been completed in Porter Township.

Between No. 1 Mattie Yost and No. 2 Otway, a stretch of 7 miles, several wells believed to indicate a continuous structure have been drilled. The Pure Oil Co. has brought in three good producers ranging from 127 to 400 bbls. initially in Sections 1 and 2 of Jasper Township, Midland County. The Gordon Oil Co. also struck a 180-bbl. well on the Muscott lease, SE NW NE Section 17-13n-1w, Porter Township, 2 miles west of the Pure Oil Co.'s State-Porter lease and 2 miles northwest of the Otway and other wells in Section 22.

This entire development was first indicated more than 18 months ago when the Michigan Pacific Oil & Gas Co. brought in No. 1 Otway in Section 26, Porter Township, as a 50-bbl. well. The discovery of the big pool was delayed, however, by two dusters drilled north and south of the producer as direct offsets. No. 2 Otway is northwest of No. 1.

Oil Production first began to show the increase from the new pool in April when the daily average advanced from 14,000 to 15,000 bbls. Subsequent months have continued the increase until the first half of 1933 will see a total of at least 2,700,000 bbls. of oil produced in Michigan.

The old Muskegon Field has been making about 25,000 bbls a month, or 800 bbls. a day from a few old wells and several small ones and the rest is coming from the Mount Pleasant area.

While other fields struggled under drastic price cuts Michigan crude held steady for four months at 95 cents and $1 a barrel because of the demand for several small refineries in Muskegon, Mount Pleasant, Big Rapids and Midland. The lowest price paid during the past six months was that of 75 cents posted May 8 for Mount Pleasant crude by the Pure Oil Co. Muskegon crude continued to bring $1 or more a barrel under contract.

Renewed activity resulted in Vernon Township when the Mellon-Pollock Oil Co.'s No. 1 Brief, in Section 22-16n-4w, was deepened and increased from a declining production of 45 to 700 bbls. a day, or nearly as high as the initial of 750 bbls. on September 29, 1931. Ten wells were completed, five for oil, one for gas and four dry during subsequent drilling in the township.

New Development Started

An interesting new development has been started as a result of the success of the Wittmer Oil Co. in its No. 1 Saray Cashen, NW NE SW Section 30-15n-3w, Denver Township, south of the East Pool, which made 25 bbls. at 3,665 feet deep.

Two wells now are drilling as a result, Brehm and Melvin's No. 1 Smith, Section 23-15n-3w, Denver Township, 4 miles east of the Leaton Pool and 3 miles north of the old Chippewa Pool, and the Michigan Gas & Oil Co.'s No. 1 Busche, Section 10-16n-3w, Wise Township, near the village of Loomis.

Thompson & Fortney's No. 1 Gilbert A. Currie, SW cor. Section 16, Mount Haley Township, is another interesting semiwildcat test. Several other new Vernon Township tests also are in progress.

The most likely looking areas for new wildcat activities during the last half of 1933 include Oceana County, where two producers were completed; Mecosta County, where James M. Taggart and others struck a flow of 4,195,000 feet a day of natural gas at 1,481-85 feet in the Michigan series above the Marshall; Clare County, where gas field operations recently have been resumed by W. J. Sovereign after about a year's litigation over the right to drill on the Pere Marquette Railroad right of way; Saginaw County, where two small oil wells were completed in Birch Run Township; and Muskegon County, where the Muskegon Oil Corp. is preparing to drill structure test wells in two sections located southeast of the old field.

Tuscola, Ogemaw, Gratiot, Shiawassee, St. Clair and Newaygo Counties also may get a play. Antrim County, where a shallow wildcat recently was started by Muskegon interests, is another possible center of activity.

Oil and Gas in Vassar

The Pure Oil Co. had a show of oil and gas in its George Veitengruber well, in Section 27, Vassar Township, Tuscola County.

The Pure Oil Co. also struck a flow of 250,000 feet a day of gas in its Mills estate well, SE NW SE Section 36-21n-3w, Mills Township, Ogemaw County, before it was abandoned at 2,682 feet. Four tests in Gratiot County were dry and abandoned but there is still some interest because of the dry gassers previously completed there.

Jonesfield Township, Saginaw County, may see a little play as the result of leasing programs which have been conducted for some time. Jonesfield adjoins Porter and Midland Townships. Other scattered wildcats will be drilled.

The Newaygo Oil & Gas Co.'s No. 1 A. J. Bates, NE SE Section 12, Sherman Township, Newaygo County, set a new depth record for Michigan early in June when it reached 6,418 feet in the Trenton caprock in the lower Silurian.

The Newaygo-Bates well is located about half way between the Muskegon and Mount Pleasant Fields. Drilling was started in 1928 after the two main fields had been opened. It was decided to make a deep test of the hole in March, 1929, and it has been drilling intermittently since then.

When the half year closed the Mount Pleasant area was still the center of activity with 25 drilling wells, 5 temporarily shut down, 2 testing and 5 building rig.

Several rigs were being erected in the Oceana Field by James E. Flanigan, of Toledo, Ohio, who has taken out permits for at least four new tests near No. 1 E. Mitchell, the second producer in the Oceana Field.

MICHIGAN FIELDS

Summary of Wells Completed for First Half of 1933

Month—	Comp.	Prod.	Dry	Gas
January	13	2,005	3	1
February	15	840	7	0
March	15	1,655	4	2
April	24	9,825	5	0
May	22	5,100	3	0
June	13	2,925	2	0
First half 1933	102	22,350	27	3
First half 1932	66	41,655	22	7
Difference	36	19,305	5	4

Summary by Counties

County—	Comp.	Prod.	Dry	Gas
Muskegon	3	0	3	0
Isabella	11	1,060	3	2
Midland	70	21,200	7	0
Clare	3	0	3	0
Gratiot	4	0	4	0
Oceana	3	75	2	0
Cass	1	0	1	0
Saginaw	3	25	1	0
Mecosta	1	0	0	1
Wexford	1	0	1	0
Ogemaw	1	0	1	0
Newyago	1	0	1	0
First half 1933	102	22,350	27	3

Veterans of Pipe Line Enjoy Happy Reunion

OIL CITY, Pa., July 22.—Six retired pipe line veterans, whose ages totaled 460 years, held a happy reunion and luncheon at the Wanango Country Club. The veterans are all former employes of the Union Pipe Line Co., between the years of 1873 and 1876, and so far as they know are the only survivors of the company's employes at that time.

Those who took part in the unusual gathering were: O. S. June, of Lima, Ohio, retired, former vice president and general manager of the Buckeye Pipe Line Co.; T. M. Magee, retired, of Grove City, former superintendent and director of the South West Pennsylvania Pipe Line Co., with headquarters at Pittsburgh; F. D. Williams, of Oil City, retired, former president and director of the National Transit Co.; W. W. Imus, of Silver Creek, N. Y., retired, formerly associated with the Producers & Refiners Oil Co.; Harry P. Clark, of Emlenton, retired, former agent of the National Transit Co., at Emlenton; and C. A. McLouth, of Oil City, retired, former secretary and assistant treasurer of the Southern Group of Pipe Lines at Oil City.

Mr. June related how he worked with the late P. C. Boyle at Parker and of the laying of the first gas line from the Speechley gas well to Titusville in the winter of 1886.

The veterans ranged in age from 77 to 81 years with Mr. June being the senior member.

First Half Year in Kansas Saw More Completions and Production Than Same Period in 1932

By W. A. SPINNEY
Staff Correspondent, Kansas Fields

Kansas was fortunate in the first half of 1933 to be one of the few states that found its crude oil supply in great demand. The local purchasers found it hard to secure enough crude oil to meet their demands on account of the low allowables the state authorities kept in force notwithstanding the larger nominations asked for by all the purchasing companies. Two hundred and forty wells were completed in the State in the first six months of the year, an increase of 10 over the record of the first half of 1932. One wildcat pool was opened in the six months and this and a deeper sand in aother area were the only new sources of crude found.

The new pool was discovered by the Atlantic Oil Producing Co. in Stafford County in the central western part of the State and the discovery well was the only development. It was shut in after making a production test awaiting a market outlet. The discovery well was located about 11 miles from the nearest other production.

The other important discovery was the finding of production in the Wilcox sand in the Hollow Pool in Harvey County, the equivalent of finding a new pool, as it is believed that a large crude supply underlies the greater portion of the proven area of the Hollow Field. The Wilcox sand production was found in wells that were 2 miles apart and the development was getting under way in an active manner at the close of June.

The Chase townsite in Rice County was beginning to be considered an important area at the close of the first half of the year. A 2,400-bbl. well was completed in June on the townsite from the Siliceous lime and the completion of this well was expected to be the forerunner of an active drilling campaign. In the other western counties development was slow on account of the low crude oil prices that prevailed during most of the first half of the year.

The most active development in Kansas was in the Mabee Pool, in McPherson County, and in the Hollow Pool, in Harvey County.

Four Pays in Hollow Pool

One of the important features of the first half of the year was the finding of the Wilcox sand in the Hollow Pool, Harvey County, in May, giving this field its fourth producing horizon. The discovery Wilcox sand well was Producers & Refiners Corp.'s No. 2 Martens, in Section 19-22-3w. Oil rose 1,200 feet in the hole and it swabbed 100 bbls. an hour from sand at 3,510-14 feet.

In April the Magnolia Petroleum Co.'s No. 1 Schmidt, in Section 30-22-3w, in the south end of the Hollow Pool, found the third producing horizon, the Kansas City-Lansing lime, at 2,490-2,520 feet, where it made around 100 bbls. a day. It was later treated with acid and made 20 bbls. an hour.

These two additional producing horizons in the Hollow Pool give this territory added importance as the majority of the wells in the field found their production in the Hunton lime. There are approximately 11 chat wells in the field.

The Hollow Pool is the only place in the State where oil has been found under the Hunton lime. In all other places in Kansas water has been found in formations below where the Hunton lime has carried oil. The present indications are that the Wilcox sand will be productive in two parts of the Hollow Field, as there are two high points in the pool, one in the south end that is productive and the other in the northern part of the area, around Section 8-22-3w.

The field was discovered in December, 1931, when a wildcat well found the Hunton lime productive and it soon became an important producing area after a number of years of wildcatting in the county. The discovery well was Frank Hollow and others' No. 1 Church acre, SW cor. NW Section 20-22-3w, which made 1,450 bbls. the first 24 hours. It was drilled on a lease less than 1 acre in size. The pool is located on the Abilene Arch, the same as the Voshell Pool, in McPherson County, which also produces from the Wilcox sand, and is located several miles northeast.

The Hollow Pool was extended a mile north by the completion of Carter Oil Co. and others' No. 1 Schmidt, SE cor. SW NW Section 17-22-3w, in March. The well swabbed at the rate of 80 bbls. an hour from the Hunton lime at 3,450-61 feet.

Later in March the pool was given a further extension to the north when the Texas Co. and McComb's No. 1 Dyck, SW cor. NE SW Section 8-22-3w, found oil in the chat at 3,170-3,201 feet. The well made 1,000 bbls. of oil a day and 10,000,000 feet of gas.

Stafford's New Pool

The new pool in Stafford County was opened in May, giving that county its second producing area. The Atlantic Oil Producing Co.'s No. 1 Gates, NW cor. SE Section 27-21-13w, swabbed 240 bbls. of oil the first 24 hours from Siliceous lime at 3,698-3,704 feet.

The well was located in the center of a 5,000-acre block of leases controlled by the Atlantic Oil Producing Co. It was drilled after a core-drilling and seismograph survey of the area. It is about 11 miles northwest from the nearest other production, in the Richardson Pool, in eastern Stafford County. The discovery well was shut in awaiting a pipe line outlet.

In March a test for oil and gas was started in Trego County, Central Commercial Oil Co.'s No. 2 King, in Section 20-13-21w. At the close of June it was shut down at 3,209 feet. No. 1 King, the

Kansas

Daily Average and Monthly Production First Six Months of 1933

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
SEDGWICK COUNTY:							
Wright—							
Daily average	2,842	2,695	2,669	2,857	2,416	2,274	
Month	88,133	75,460	82,739	79,710	74,896	68,220	469,158
Greenwich—							
Daily average	3,090	3,316	4,139	5,256	5,566	5,264	
Month	95,790	92,848	128,309	160,680	172,546	157,920	808,993
Robbins—							
Daily average	176	164	154	157	127	130	
Month	5,456	4,592	4,774	4,710	4,247	3,900	27,679
Eastborough—							
Daily average	2,498	2,208	2,195	2,095	1,540	1,496	
Month	77,438	61,824	68,138	62,850	47,740	44,880	362,870
Miscellaneous—							
Daily average	629	645	602	556	688	602	
Month	19,499	18,060	18,662	16,680	21,328	18,060	112,289
MARION COUNTY:							
Florence-Urschel—							
Daily average	72	86	74	81	67	69	
Month	2,233	2,408	2,294	2,430	2,077	2,070	13,511
Peabody—							
Daily average	414	315	332	320	347	336	
Month	12,834	8,820	10,292	9,600	10,757	10,080	62,383
Covert-Sellers—							
Daily average	242	307	306	364	313	316	
Month	7,533	8,596	9,486	10,920	9,703	9,480	55,718
Lost Springs—							
Daily average	398	403	383	391	377	371	
Month	12,338	11,284	11,872	11,730	11,687	11,130	70,042
Davis—							
Daily average	392	391	396	377	396	388	
Month	12,152	10,948	12,276	11,310	12,276	11,640	70,602
BUTLER COUNTY:							
Elbing—							
Daily average	1,335	1,455	1,330	1,358	1,335	1,304	
Month	41,385	40,740	41,230	40,740	41,385	39,120	244,600
Potwin—							
Daily average	283	286	319	306	348	326	
Month	8,773	8,008	9,889	9,180	10,788	9,780	56,418
South Augusta—							
Daily average	735	705	781	783	986	833	
Month	22,785	19,740	24,211	23,490	30,566	24,990	145,782
North Augusta—							
Daily average	657	678	629	681	623	629	
Month	20,367	18,984	19,499	20,430	19,313	18,870	117,463
Towanda—							
Daily average	1,360	1,332	1,388	1,861	1,866	1,847	
Month	42,160	37,296	43,028	55,830	57,846	55,410	291,570
Cameron-Robinson—							
Daily average	377	369	311	342	342	335	
Month	11,687	10,332	9,641	10,260	10,602	10,050	62,572
Sluss—							
Daily average	146	144	129	160	121	132	
Month	4,526	4,032	3,999	4,800	3,751	3,960	25,068
Nuttle-Koogler—							
Daily average	2,092	1,955	2,004	2,012	2,103	2,060	
Month	62,962	54,740	62,124	60,360	65,193	61,800	366,279
Wilson-Dunkle—							
Daily average	1,079	907	1,071	1,085	1,110	1,063	
Month	33,449	25,396	33,201	32,550	34,410	31,890	199,896
Eldorado—							
Daily average	4,780	4,225	4,795	4,812	4,948	4,863	
Month	143,180	118,300	148,645	144,360	153,388	145,890	853,763
Smock—							
Daily average	159	152	163	160	156	152	
Month	4,929	4,256	5,053	4,800	4,836	4,560	28,434
Leon-Weaver—							
Daily average	1,950	1,896	2,036	2,061	1,526	1,607	
Month	60,739	53,088	63,116	61,830	47,306	48,219	334,279
Fox-Bush—							
Daily average	718	740	614	674	625	631	
Month	22,258	20,720	19,034	20,220	19,375	18,930	120,537
Douglass—							
Daily average	84	84	83	84	81	82	
Month	2,728	2,352	2,573	2,520	2,511	2,460	15,144
Keighly—							
Daily average	257	248	246	258	193	190	
Month	7,967	6,944	7,626	7,740	5,823	5,700	41,805
Benton—							
Daily average	49	36	44	35	36	36	
Month	1,519	1,008	1,364	1,050	1,116	1,080	7,137
Blankenship—							
Daily average	365	325	520	541	495	488	
Month	11,315	9,100	16,120	16,230	15,345	14,640	82,750

(Continued on Next Page)

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discovery well, was completed in 1931 by the same company. Water broke into this well from behind the 6-inch casing and it stood on the sand for several months. It was being pumped in March and was making 10 bbls. a day.

In the Reno County gas area the third large gas well was completed in May. The well was the Olson Oil Co. and others' No. 1 Krehbiel, C SE NW NW Section 26-23-4w. It made 25,000,000 feet of gas a day from the chat formation at 3,233-3,320 feet. The rock pressure was estimated at 1,180 pounds.

KANSAS
Summary of Wells Completed First Six Months of 1933

County—	Comp.	Prod.	Dry	Gas
Barton	3	712	5	0
Butler	4	85	3	0
Chase	2	175	1	0
Cowley	12	1,670	6	1
Coffey	1	30	0	0
Dickinson	1	0	1	0
Elk	6	30	5	0
Ellis	3	152	1	0
Ellsworth	15	2,029	6	0
Franklin	1	0	1	0
Greenwood	33	331	20	0
Harvey	32	26,499	4	0
Kingman	3	438	1	0
Lyon	1	0	1	0
McPherson	69	34,925	14	5
Marion	1	0	1	0
Morris	1	0	0	1
Ness	1	0	1	0
Reno	9	1,094	0	2
Rice	7	1,466	3	0
Russell	5	641	0	0
Sedgwick	8	5,150	3	0
Stafford	3	1,373	1	0
Sumner	1	600	0	0
Woodson	13	509	5	0
Total 6 mos. 1933	240	77,909	83	9
Total 6 mos. 1932	230	82,509	77	9
Difference	10	4,600	6	0

Summary by Months

Month—	Comp.	Prod.	Dry	Gas
January	46	10,998	18	2
February	33	8,018	15	1
March	33	13,981	7	0
April	49	19,821	17	3
May	50	16,839	17	1
June	29	8,202	9	2
First half 1933	240	77,909	83	9
First half 1932	230	82,509	77	9
First half 1931	256	75,488	79	58
First half 1930	514	100,380	217	47
First half 1929	489	78,523	206	35
First half 1928	624	68,581	225	59
First half 1927	770	62,726	331	40
First half 1926	1,209	88,401	390	54

Developing Mabee Pool

The area of greatest interest during the half year was the northwestern part of Harvey County, extending over into the southern part of McPherson County. Included in this area are the Hollow Pool in Harvey County and the Mabee Pool in McPherson County.

In January the development of the Mabee Pool was in full progress as the result of the Derby Oil Co. having been granted a temporary injunction against the Public Service Commission after that body had ordered all wells shut in without any notice on December 31, 1932. The court's ruling set aside the commission's order and at that time there were four producing wells in the field and several others nearing completion.

The production in the Mabee area was extended to the north by the completion of the Mid-Kansas Oil & Gas Co.'s No. 1 J. J. Schmidt, NE cor. SE NW Section 33-21-3w. It started swabbing at the rate of 85 bbls. an hour from Hunton lime at 3,467-77 feet.

The production was extended to the south more than a mile by a well that was completed in February. It was Lee and others' No. 1 Wall, NW cor. SW Section 2-44-3w, Harvey County, which started flowing at the rate of 20 bbls. an hour from the Hunton lime at 3,495-3,507 feet.

The field was defined on the east by a dry hole. Lario Oil & Gas Co.'s No. 1 Krehbiel, SW cor. Section 27-21-3w, found the Hunton lime dry at 3,472-3,503 feet and the Wilcox sand at 3,850-53 feet with water. This well defined the eastern edge of the producing area.

Development in the Mabee Pool continued steadily since its discovery in October, 1932, and at the end of June, 1933, there were 19 producing wells with a potential of 23,726 bbls. daily.

Acid treatment of wells in the Mabee Pool was started in April and it was be-

(Continued on Page 88)

Kansas (Continued)

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
GREENWOOD AND WOODSON COUNTIES:							
Saliyards—							
Daily average	731	716	727	723	681	701	
Month	22,661	20,045	22,537	21,660	21,111	21,030	128,737
Teeter—							
Daily average	2,547	2,414	2,525	2,416	2,199	2,362	
Month	78,957	67,592	78,275	72,480	68,149	70,860	436,333
Virgil—							
Daily average	3,765	3,401	3,621	3,494	2,759	3,390	
Month	116,715	95,228	112,351	104,820	85,529	101,700	616,243
Thrall-Burkett—							
Daily average	771	781	783	791	749	755	
Month	23,901	21,868	24,275	23,730	23,219	22,650	139,641
Seeley—							
Daily average	3,746	3,546	3,646	3,494	2,977	3,362	
Month	116,126	99,288	113,026	104,820	92,287	100,860	626,407
Polhamus—							
Daily average	561	515	523	463	383	390	
Month	17,391	14,420	16,213	13,890	11,873	11,700	85,487
Miscellaneous—							
Daily average	553	473	473	453	388	407	
Month	17,298	13,384	14,663	13,740	12,028	12,210	83,323
COWLEY COUNTY:							
Winfield-New Salem—							
Daily average	3,833	3,379	3,338	3,089	2,791	2,872	
Month	118,823	91,812	103,478	92,670	86,521	86,160	579,464
Miscellaneous—							
Daily average	2,875	2,771	2,786	2,837	2,416	2,650	
Month	89,125	77,588	86,366	85,110	74,896	79,500	492,585
McPHERSON COUNTY:							
Ritz-Canton—							
Daily average	15,572	20,198	22,633	21,663	18,591	17,362	
Month	482,732	565,544	701,623	649,890	576,321	520,860	3,496,970
Voshell—							
Daily average	5,246	7,721	10,778	7,744	5,680	5,885	
Month	162,626	216,188	334,118	232,320	176,080	176,550	1,297,882
Johnson—							
Daily average	669	1,575	2,700	2,294	2,012	1,988	
Month	20,739	44,100	83,700	68,820	62,372	59,640	339,371
Nikkel—							
Daily average	1,251	2,989	5,944	7,628	7,921	8,227	
Month	38,781	83,692	184,264	229,140	245,551	246,810	1,028,238
Miscellaneous—							
Daily average	49	66	53	70	56	55	
Month	1,519	1,848	1,643	2,100	1,736	1,650	10,496
OTHER COUNTIES:							
Rooks—							
Daily average	82	81	33	28	13	20	
Month	2,573	2,268	1,023	840	403	600	7,707
Sumner—							
Daily average	3,876	4,145	3,755	3,609	3,641	3,473	
Month	120,156	116,060	116,405	108,270	112,871	104,190	677,952
Rice—							
Daily average	2,756	2,167	3,174	3,649	3,376	3,424	
Month	85,436	60,676	98,391	109,470	104,656	102,720	561,349
Russell—							
Daily average	2,167	1,931	2,118	2,252	1,849	2,152	
Month	67,177	54,068	65,658	67,560	57,319	64,560	376,342
Reno—							
Daily average	1,784	1,669	1,697	1,720	1,449	1,537	
Month	55,304	46,732	52,607	51,600	44,919	46,110	297,372
Harvey—							
Daily average	1,631	2,989	5,918	7,331	7,076	7,850	
Month	50,561	83,692	183,458	219,930	219,356	235,500	992,497
Chautauqua—							
Daily average	1,614	1,611	1,596	1,599	1,594	1,591	
Month	50,034	45,108	49,476	47,970	49,414	47,730	289,732
Elk—							
Daily average	912	902	894	858	862	882	
Month	28,272	25,284	27,714	26,740	26,722	26,640	160,372
Wilson—							
Daily average	167	165	164	163	161	162	
Month	5,177	4,620	5,084	4,890	4,991	4,860	29,622
Montgomery—							
Daily average	1,200	1,193	1,105	1,187	1,179	1,169	
Month	37,200	33,404	34,255	35,610	36,549	35,070	212,088
Edwards—							
Daily average	28	19	20	20	14	.....	
Month	868	532	620	600	434	.....	3,054
Ellis—							
Daily average	671	654	808	691	398	408	
Month	20,801	19,152	25,048	20,730	12,338	12,240	110,309
Barton—							
Daily average	68	155	196	366	601	391	
Month	2,178	4,340	6,068	10,980	18,631	11,730	53,852
Kingman—							
Daily average	42	8	326	364	271	285	
Month	1,302	224	10,106	10,920	8,401	8,559	39,503
Stafford—							
Daily average	132	214	200	286	156	.....	
Month	4,092	5,992	6,201	8,580	4,836	.....	29,701
Allen—							
Daily average	495	489	529	531	518	520	
Month	15,345	13,692	16,399	15,930	16,058	15,600	93,024
Neosho—							
Daily average	439	432	478	483	474	469	
Month	13,609	12,124	14,818	14,490	14,694	14,070	83,805
Lyon—							
Daily average	272	276	284	255	199	242	
Month	8,463	7,728	8,804	7,650	6,169	7,260	46,074
Miami—							
Daily average	1,191	1,178	1,193	1,197	1,138	1,172	
Month	36,921	32,984	36,982	35,910	36,328	35,160	214,786
Franklin—							
Daily average	279	281	279	276	279	274	
Month	8,649	7,868	8,649	8,280	8,649	8,220	50,315
Douglass-Labette—							
Daily average	22	23	.....	21	21	22	
Month	682	644	.....	630	651	660	3,267
Bourbon—							
Daily average	35	34	29	51	47	48	
Month	1,085	952	899	1,530	1,457	1,440	7,363
Linn—							
Daily average	106	105	111	112	103	108	
Month	3,286	2,949	3,441	3,360	3,193	3,240	19,469
Anderson—							
Daily average	870	873	860	857	861	862	
Month	26,970	24,444	26,660	25,710	26,691	25,860	156,335
Ellsworth—							
Daily average	2,474	1,871	2,224	1,749	1,007	1,671	
Month	76,694	52,388	68,942	52,470	31,217	50,130	331,841
Woodson—							
Daily average	39	40	39	38	37	37	
Month	1,209	1,120	1,209	1,140	1,147	1,110	6,935
Daily average	92,622	100,054	116,276	116,423	105,713	107,925	106,396
Total first six months 1933	2,871,282	2,801,513	3,604,539	3,492,990	3,277,103	3,210,150	19,257,576
Total first six months 1932	3,170,587	2,538,839	3,042,929	2,974,080	3,038,930	2,837,179	17,602,544
Total first six months 1931	3,432,475	3,341,016	3,498,598	3,281,880	3,341,366	3,175,446	20,070,775
Total first six months 1930	3,273,197	2,966,704	3,504,395	3,734,253	3,987,385	3,765,060	21,230,994
Total first six months 1929	2,861,641	2,557,968	2,951,076	3,112,740	3,605,039	3,476,150	18,784,674
Total first six months 1928	2,319,325	2,079,887	2,379,031	2,412,360	2,867,809	3,202,050	15,760,462
Total first six months 1927	3,769,879	3,353,076	3,675,149	3,516,930	3,704,514	3,437,580	21,455,922
Total first six months 1926	3,250,536	2,877,312	3,334,887	3,330,120	3,616,640	3,366,460	19,676,445

Serpentine Pools Featured Discoveries in First Six Months of 1933 in Southwest Texas

By B. D. STEVENSON
Staff Correspondent, Southwest Texas Fields

The number of completions in Southwest Texas during the first six months of 1933 was about 30 per cent greater than for the first six months of 1932 and initial production about 50 per cent greater and about 50 per cent more dry holes drilled. The number of new spots where oil or gas was found amounted to about a dozen which is about the same as for the first half of 1932.

However, the new discoveries fail to rank in importance with the discoveries of the first half of 1932 mainly on account of the North Government Wells Pool being credited to that period. In making that statement reservation must be made for the possibility that development of some of the new finds may disclose that they are of equal or even greater importance.

Serpentine Pools

Hilbig Pool in Bastrop County, discovered by the Humble Oil & Refining Co., furnished the most of the production from new pools found the first six months of 1933. The discovery well was brought in February 16, 1933. There have been some other discoveries that may ultimately prove as important or more so, but they were discovered late in the half year and development in most cases barely started, or not started at all.

One of these was another new Serpentine pool found in Bastrop by Marts & Beaven's No. 2 Reyes, which made 175 bbls. in 24 hours and was finished June 20, so late in the half year period that development of the pool will all come in the second half year.

The Sun Oil Co.'s new pool in northern Starr County was opened with the completion of the No. 1-A Guerra June 27, within three days of the close of the half-year period, and it might develop into as important a pool as any. Magnolia found new production 20 miles from any other in the No. 2 Seeligson, in southern Jim Wells County, completed April 4, 1933, but no further development was undertaken, though late in the period the Magnolia started laying pipe line the few miles from the well to the railroad. An interesting feature is that a year ago Gulf Production Co. brought in a gas well in the northern part of Jim Wells County, the first in the county.

New Duval Pools

Smith & Capps on January 4 completed No. 1 Peters, in Survey No. 178 in northern Duval County, at 2,452 feet for a big gas well. Since then the Smith & Capps interest in the deal was sold to Shasta Oil Co. and that company, with Highland Oil Co., owners of the other interest, drilled the No. 2, also a gas well, and the No. 3, a dry hole, and No. 4, a small oil well. There are indications of an oil pool, but as the half year closes it has not materialized though Brooklyn Oil Co., 2 miles northeast in the same Government Wells sand, brought in the No. 1 Sutherland, a good sized gas well spraying oil.

Smith and Hunter drilled the No. 1 Pena, 7 miles east of the North Government Wells Pool, and got a gas well at 1,931 feet and it looked for a time as though a pool would be opened there, but the gasser later went dead and a deeper test failed to find the pay.

As the half year closed, Magnolia Petroleum Co. was putting on the pump a test in Survey 363, 2 miles northwest of the North Government Wells Pool, that swabbed at the rate of 85 bbls. a day. It seems to have opened a new pool though the size of the well is small compared with those in the North Government Wells Pool.

New Discoveries

Taking the new discoveries for the half year in order, the Hilbig Pool in southern Bastrop County was brought in by Humble Oil & Refining Co.'s No. 1 Annie Hassler, 750 feet from the northwest line and 330 feet from the southwest line of the tract in the Samuel Wolfensbarger Survey, and is 330 feet also from the southwest line of the survey and about midway between the northwest and southeast lines of the survey. It topped Serpentine at 2,468 feet and was completed at 2,577 feet and flowed 78 bbls. the second hour through flow line and when pinched to one-eighth of an inch flowed 7½ bbls. an hour 38 gravity oil.

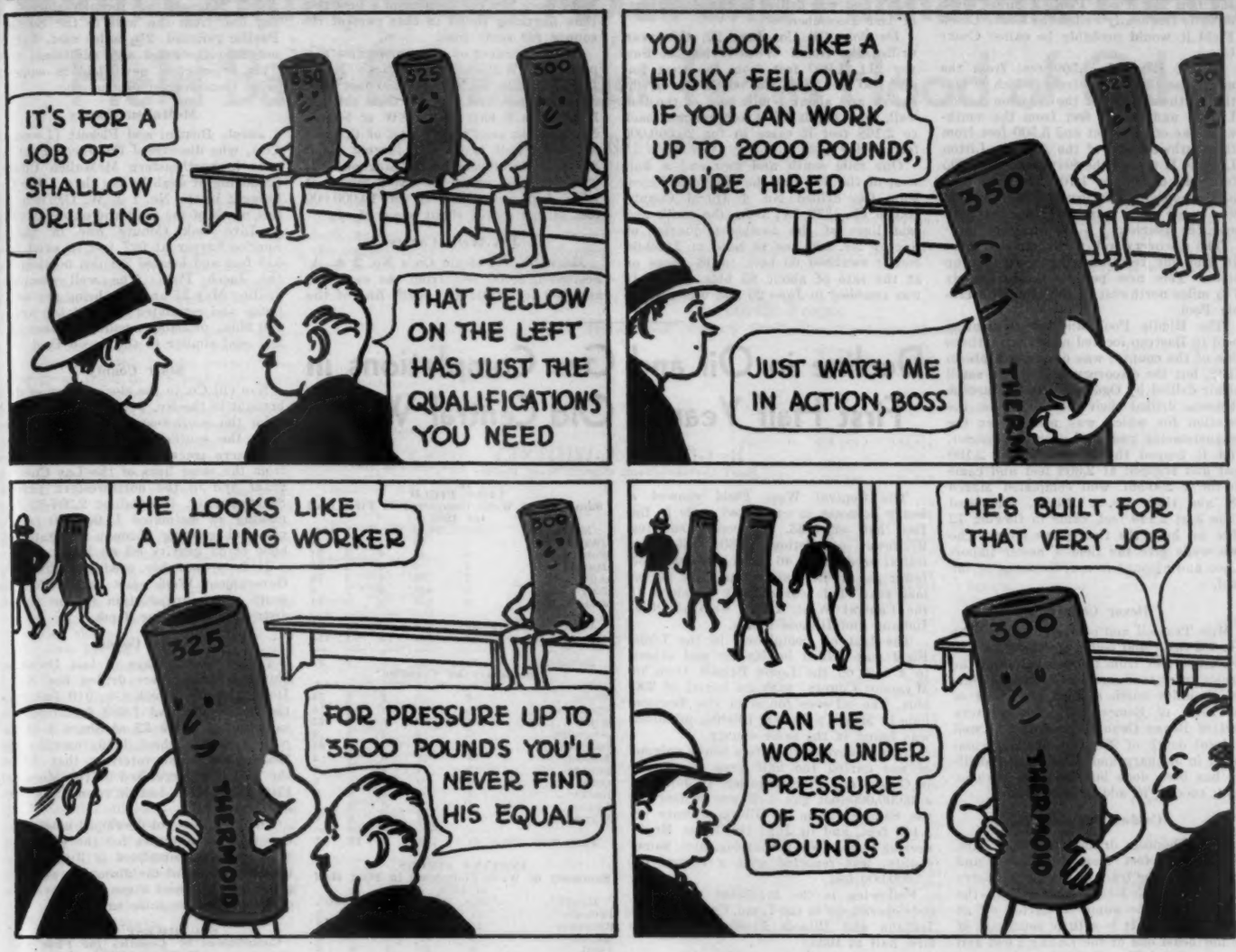
Marts & Beavens got a showing of oil that almost made a commercial well in the No. 1 Reyes in Bastrop and led to the drilling of No. 2 Reyes, which came

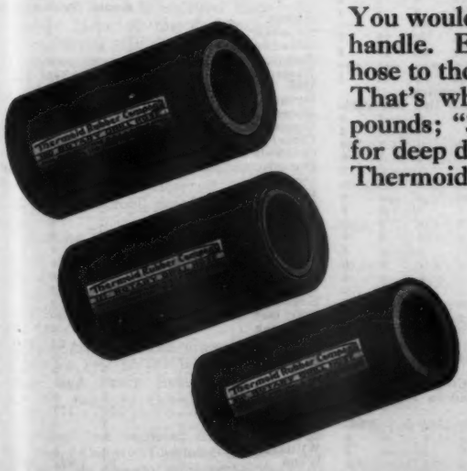
Southwest Texas

Daily Average and Monthly Production First Six Months of 1933

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
AGUA DULCE:							
Daily average	6	25	22	13	13	9	
Month	184	710	688	395	407	267	2,641
BEXAR COUNTY:							
Daily average	488	500	503	554	616	608	
Month	15,122	14,005	15,597	16,608	19,090	18,248	98,670
BRANYON:							
Daily average	38	33	42	56	45	34	
Month	1,176	920	1,300	1,674	1,390	1,032	7,492
BRUNER:							
Daily average	5,233	6,299	5,576	5,988	6,314	5,855	
Month	193,227	176,377	188,075	179,642	195,738	175,640	1,105,699
BUCHANAN:							
Daily average	46	42	44	45	42	41	
Month	1,420	1,174	1,368	1,359	1,306	1,243	7,870
CHAPMAN:							
Daily average	824	805	795	791	730	742	
Month	25,548	22,543	24,648	23,727	24,175	22,247	142,888
DALE:							
Daily average	212	221	223	244	206	204	
Month	6,576	6,183	6,911	7,320	6,382	6,115	39,487
DARST CREEK:							
Daily average	13,897	13,748	14,040	13,026	12,813	12,370	
Month	430,803	384,948	435,246	390,772	397,207	371,108	2,410,984
DUNLAP:							
Daily average	150	146	179	206	123	142	
Month	4,655	4,081	5,543	6,178	3,811	4,250	28,518
GOLIAD:							
Daily average	46	41	35	36	31	34	
Month	1,426	1,145	1,080	1,074	969	1,020	6,714
JACOBS:							
Daily average	307	280	211	234	252	251	
Month	9,519	7,846	6,543	7,027	7,810	7,522	46,267
KINGSVILLE:							
Daily average	98	104	102	93	80	81	
Month	3,032	2,910	3,164	2,803	2,488	2,435	16,832
LARREMORE:							
Daily average	55	55	52	47	44	46	
Month	1,700	1,545	1,610	1,407	1,360	1,394	9,016
LULING:							
Daily average	7,307	7,207	7,251	7,006	6,453	6,633	
Month	226,519	201,793	224,786	210,184	200,037	198,987	1,262,306
LYTTON SPRINGS:							
Daily average	549	523	530	521	453	758	
Month	17,013	14,641	16,436	15,628	14,041	22,734	100,493
HILBIG:							
Daily average	.....	47	131	170	540	722	
Month	.....	1,319	4,067	5,108	16,745	21,667	48,906
JOLIET:							
Daily average	.....	.....	.....	.....	31	27	
Month	.....	.....	.....	.....	964	805	1,769
MANFORD:							
Daily average	79	69	63	61	49	61	
Month	2,447	1,937	1,950	1,836	1,513	1,832	11,509
McMULLEN (Calliham):							
Daily average	15	50	65	54	67	67	
Month	460	1,408	1,980	1,620	2,071	2,010	9,549
MEDINA COUNTY:							
Daily average	23	24	24	24	23	23	
Month	719	670	741	729	717	694	4,279
MINERVA:							
Daily average	334	334	334	327	334	286	
Month	10,358	9,352	10,350	9,802	10,350	8,586	58,798
MIRANDO DISTRICT:							
Daily average	16,242	16,669	18,758	20,040	20,698	21,282	
Month	503,508	466,736	581,492	601,213	641,632	638,452	3,433,034
OGDEN (Bateman):							
Daily average	55	45	29	126	201	197	
Month	1,709	1,260	893	3,774	6,231	5,904	19,762
PETTUS DISTRICT:							
Daily average	3,749	3,811	3,952	3,601	3,335	3,542	
Month	116,216	106,700	122,518	108,021	103,380	106,297	663,131
SAL MAR:							
Daily average	3	15	11	5	10	10	
Month	96	428	340	163	315	290	1,632
SAXET:							
Daily average	1,898	2,122	1,982	2,175	2,836	2,686	
Month	58,830	59,410	61,447	65,248	87,918	80,576	413,429
SOMERSET:							
Daily average	1,013	990	1,013	1,007	983	916	
Month	31,406	27,725	31,403	30,219	30,479	27,471	178,703
THRALL:							
Daily average	37	35	35	34	35	40	
Month	1,143	983	1,088	1,012	1,080	1,191	6,497
TULETA:							
Daily average	541	206	212	208	218	216	
Month	16,777	5,762	6,570	6,245	6,756	6,487	48,597
WHITE POINT:							
Daily average	47	46	47	43	42	52	
Month	1,457	1,280	1,461	1,283	1,305	1,561	8,340
YOAST:							
Daily average	126	122	126	117	128	114	
Month	3,908	3,412	3,902	3,510	3,964	3,428	22,124
Daily average	54,412	54,614	56,780	56,854	57,795	58,049	
Total first six months 1933	1,686,944	1,529,302	1,760,187	1,705,575	1,791,624	1,741,434	10,215,027
Total first six months 1932	1,821,552	1,836,872	1,885,784	1,730,681	1,971,657	1,849,784	11,094,330
Total first six months 1931	2,698,916	2,362,696	2,239,534	2,211,571	2,068,458	2,000,546	13,582,721
Total first six months 1930	1,981,174	1,813,895	1,977,584	1,893,330	2,188,405	2,421,341	12,275,729
Total first six months 1929	1,453,437	1,527,977	3,021,412	2,199,207	2,413,599	2,424,277	12,039,599
Total first six months 1928	825,036	789,190	839,945	807,553	804,627	774,570	4,840,921

A JOB FOR EACH HOSE AND A HOSE FOR EACH JOB


IT'S FOR A JOB OF SHALLOW DRILLING
350
325
300
THAT FELLOW ON THE LEFT HAS JUST THE QUALIFICATIONS YOU NEED
YOU LOOK LIKE A HUSKY FELLOW ~ IF YOU CAN WORK UP TO 2000 POUNDS, YOU'RE HIRED
JUST WATCH ME IN ACTION, BOSS
HE LOOKS LIKE A WILLING WORKER
FOR PRESSURE UP TO 3500 POUNDS YOU'LL NEVER FIND HIS EQUAL
THERMOID
HE'S BUILT FOR THAT VERY JOB
CAN HE WORK UNDER PRESSURE OF 5000 POUNDS ?



You wouldn't send a boy to do a man's work or put a man at a job that a boy could handle. Either would be poor business . . . just as poor business as trying to adapt a hose to the job *instead of picking the hose best fitted to your individual requirements.* That's why we say, use Thermoid Rotary Hose . . . "350" for pressures up to 2000 pounds; "325" for jobs where the pressure gauge doesn't exceed the 3500 mark; "300" for deep drilling and pressures up to 5000 pounds. Hose built for the job . . . as only Thermoid can build it . . . does the job more efficiently—and economically.

Let us tell you all about Thermoid Rotary Hose . . . and get the full facts concerning Thermoid Oil Country Belting . . . Steam Hose . . . Water Hose . . . Fire Hose . . . Suction Hose . . . Air Hose . . . Brake Lining . . . Packings . . . Stuffing Box Rings.

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in flowing a little, but when put on the pump made 175 bbls. in 24 hours. It is the discovery well of a new pool about 1 mile west of the town of Cedar Creek. The pool is as yet unnamed and but for the fact the Yoast Pool, 2 miles south of it, is frequently called the Cedar Creek Field it would probably be called Cedar Creek.

No. 2 Reyes is 1,500 feet from the northwest line of the tract, which is also the northwest line of the Addison Litton League and is 150 feet from the southwest line of the tract and 3,500 feet from the southwest line of the Addison Litton League. It topped the Serpentine at 1,695 feet and drilled to 1,707 feet, stopping in Serpentine. The location for the test was made after using the magnetometer over the district.

The discovery well was completed June 16 and one test has started rigging up since. This new pool is approximately 7½ miles northwest of the Humble's Hilbig Pool.

The Riddle Pool, another Serpentine pool in Bastrop located near the southern line of the county, was discovered late in 1932, but the discovery well was a small affair drilled by Ogden & Reed. Marts & Beavens drilled their No. 1 Riddle, the location for which was made after the magnetometer was used over the district, and it topped the Serpentine at 2,190 feet and stopped at 2,303 feet and came in for a 250-bbl. well completed March 28, and their No. 2 Riddle, completed June 2 at 2,149 feet, came in flowing 72 bbls. an hour the first three hours. The two wells give the field a newer importance and amount to a rediscovery of the pool.

Bexar County

Milo Trussell and others completed the No. 1 Pruitt, 450 feet from the west line and 1,500 feet from the south line of the Pruitt tract in Samuel McCullough Survey, 3 miles north and slightly west of the town of Somerset in southwestern part of Bexar County for a 15-bbl. well at total depth of 905 feet. It was completed in January and some further drilling has been done but thus far without much success in adding production.

Caldwell County

F. L. Thomson drilled the No. 1 Mrs. Lawler, 150 feet from the north and west lines of the tract in the James Berry Survey, at 2,045 feet in a crevice in the chalk and on the pump it started off at 55 bbls. a day. It is a little southeast of the northeast end of the Luling Field and was completed May 9, 1933.

Duval County

Smith & Capps' No. 1 Peters, located 330 feet from the north line and 340 feet from the east line of the NE of the SE of Survey No. 178 in Duval County, in sand at 2,438-52 feet with 6⅝-inch casing set at 2,420 feet was completed January 16 for 20,000,000 feet of gas.

The field has been further developed by the drilling of the No. 2 Peters, 990 feet from the west line and 330 feet from the north line of the NW of the SW of Survey No. 176, which is the next 640-acre survey east of No. 178, and it had sands at 1,813 feet and 2,495-2,522 feet, where it tested 450 pounds; at 2,682-2,707 feet, where it tested 700 pounds and set casing but was unable to shut out water and plugged back to 2,530 feet and was completed as a gas well with 850 pounds.

Since then the Brooklyn Oil Co. drilled the No. 1 Sutherland, a 30,000,000-foot gas well, in sand at 2,447-53 feet, located 2,100 feet from the west line and 1,928 feet from the south line of Survey No. 187, about 2 miles northeast of the two gas wells and it came in a gas well spraying oil. Windsor Oil Co. drilled its No. 1 Peters a mile west of the two gas wells and on drill stem test had a big gas well at 2,226-34 feet but had not completed the well as the half year closed.

Sun Oil Co. drilled the No. 1 Duval County Ranch Co., 1,650 feet from the north and west lines of Survey No. 78, 2½ miles north and a little east of the North Government Wells Pool, total depth 2,676 feet, and plugged back to 2,167 feet it made a 7-bbl. a day pumper but was later abandoned and no additional tests have been drilled near it. Sun's test was drilled in the closing days of last December.

De Soto Oil Co. June 22, this year, drilled the No. 1 Wood-Welder in Survey 211, 1,980 feet from the west line and 950 feet from the north line of the survey and about 1 mile east of the Sun well, total depth 2,500 feet, plugged back to 2,168 feet it came in for 20,000,000 feet of dry gas.

One mile south and two and a half west of the Sun test the Magnolia Petroleum Co. drilled No. 1 Duval County Ranch Co., 330 feet from the south and east lines of the northeast quarter of Survey No. 360 and in sand at 2,259-64 feet it swabbed 65 bbls. in 18 hours or at the rate of about 85 bbls. daily. It was swabbed in June 26 and was not yet standardized as the first half of the year closed. It is producing in the Government Wells sand and at about the same depth as the producers in the north end of the North Government Wells sand and looks more like the opening of a new pool than anything found in that part of the county for some time.

The forerunner of this prospective new pool was William B. Stewart's No. 2 Duval County Ranch Co., 330 feet from the north line and 990 feet from the east line of the S half of the SW of Survey No. 362, the next survey east of that the Magnolia well is on and located about 2,500 feet southeast of the Magnolia. It was completed in the Cole sand topped at 1,557 feet and came in for 10,000,000 feet of gas and a slight show of oil.

Jim Wells County

Magnolia Petroleum Co.'s No. 2 A. A. Seeligson, 3,000 feet from the east line and 150 feet from the south line of the V. Canales Survey No. 218, 4 miles northwest of Premont in southern Jim Wells County, in sand at 3,247-51 feet was completed for an initial production of 100 bbls. daily, completion being early in April. Magnolia has recently started laying line from the well to the Southern Pacific railroad, 2½ miles east, but has not as yet started any additional tests. This prospective new field is some 20 miles from nearest production.

McMullen County

Jacob, Buzzini and Pickett (Loma Oil Co.), who discovered the Jacob Pool last year in northeastern McMullen County, producing at slightly less than 1,000 feet, brought in the No. 1 J. W. Griffith, 150 feet north of the road and on the McMullen-Live Oak County line in the T. Sparks Survey at 927 feet in sand from 915 feet and located 3 miles northeast of the Jacob Pool. The well completed drilling May 31 and was being put on the pump and estimated as good for around 100 bbls., probably opening another shallow pool similar to the Jacob Pool.

Starr County

Sun Oil Co. in the closing days of June brought in the No. 1-A Guerra, 1,140 feet from the southwest line and 6,985 feet from the southeast line of the Guerra 1,360-acre tract and the same distances from the same lines of the Las Cuevitas grant and in the northwestern part of Starr County, in sand at 2,207-32 feet, making an estimated 17,000,000 feet of gas and gauging through separator 15 bbls. of 37 gravity oil an hour.

It is presumably producing from the Government Wells sand but is 25 miles south of any production in the Laredo district at a similar depth.

Webb County

In the closing days of last December Turnbull and others drilled the No. 1 Duval County Ranch Co., 919 feet from the north line and 1,689 feet from the east line of Block 22 of Share 3 of Zapata County School land, opening the Moca Field. The interests that drilled the well later organized as the Moca Oil Co. At 885-909 feet it came in a 100-bbl. well.

This field has not developed much since due to lack of outlet for the oil, but a pipe line was completed in June. Since the bringing in of the discovery well four other oil wells and a gas well have been completed in the same sand.

Decline in Oil and Gas Completions in First Half Year in Old Central West

By GEORGE A. WHITNEY
Staff Correspondent, Central West Fields

The Central West Field showed a heavy decrease in completed wells in the first half of 1933, the record showing 97 fewer completions, 1,304 bbls. less initial production, 46 fewer dry holes, 33 fewer gas wells, than in the same period last year. This covers four divisions of the Central West, Lima, Central Ohio, Indiana and Illinois Fields.

The best oil completion in the Lima Field was drilled by Keiner and others in a test on the Louis Brandt farm in Wyandot County, with an initial of 300 bbls. The oil was found in the Trenton lime in May. In June a 150-bbl. producer was found in the same county.

Indiana developed quite a heavy volume of gas during the half year in review in Gibson and Pike Counties. In January a 9,000,000-foot gas well was drilled on the Sampley farm in Gibson County at 1,449 feet, and in June the Knox Engineering Corp.'s No. 2 Sampley farm, same county, was reported with a volume of 15,000,000 feet.

Following is the tabulated record of field operations in the Lima, Central Ohio, Indiana and Illinois Fields during the first half of 1933:

CENTRAL WEST
Field Operations for the First Half of 1933

Field—	Comp.	Prod.	Dry	Gas	Abd.
Lima	40	768	6	14	87
Central Ohio	127	544	31	73	0
Indiana	73	383	26	25	7
Illinois	8	15	5	1	9
First half 1933	248	1,695	68	113	103
First half 1932	345	2,999	114	146	327
Difference	97	1,304	46	33	224

CENTRAL OHIO FIELD
Summary of Wells Completed First Half of 1933

Month—	Comp.	Prod.	Dry	Gas
January	25	16	4	18
February	19	163	2	12
March	26	317	10	8
April	17	50	3	12
May	14	30	4	8
June	26	28	8	15
First half 1933	127	544	31	73
First half 1932	198	868	62	95
Difference	71	324	32	22

Summary by Counties

County—	Comp.	Prod.	Dry	Gas
Ashland	2	0	2	0
Lorain	6	0	1	5
Wayne	1	0	0	1
Medina	9	49	3	1
Knox	2	0	1	1
Fairfield	7	10	1	4
Coshocton	7	281	1	0
Summitt	3	0	0	2
Licking	9	110	1	4
Muskingum	6	38	1	4
Tuscarawas	2	3	1	0
Athens	4	2	1	1
Holmes	1	20	0	0
Stark	42	0	5	37
Belmont	15	20	5	9
Guernsey	8	0	4	4
Trumbull	1	0	1	0
Carroll	1	0	1	0
Cuyahoga	1	0	1	0
Richland	1	0	1	0
First half 1933	127	544	31	73

LIMA FIELD
Summary of Wells Completed in First Half of 1933

Month—	Comp.	Prod.	Dry	Gas	Abd.
January	7	13	3	2	11
February	6	11	0	3	21
March	5	0	3	3	26
April	7	39	0	3	10
May	6	453	0	1	6
June	9	197	0	4	13
First half 1933	40	768	6	15	87
First half 1932	56	619	11	24	184
Difference	16	149	5	9	97

Summary by Counties

County—	Comp.	Prod.	Dry	Gas	Abd.
Wood	0	0	0	0	26
Hancock	3	40	1	0	3
Allen	3	9	0	0	12
Auglaize	2	5	1	0	4
Sandusky	1	0	1	0	31
Mercer	3	27	0	0	2
Seneca	12	4	1	0	3
Ottawa	0	0	0	0	1
Lucas	2	3	1	0	0
Logan	2	0	0	2	0
Wyandot	13	680	1	4	0
First half 1933	40	768	6	15	87

INDIANA FIELDS
Summary of Wells Completed in First Half of 1933

Month—	Comp.	Prod.	Dry	Gas	Abd.
January	17	100	11	5	0
February	16	55	6	4	0
March	14	85	3	6	0
April	4	25	2	0	0
May	7	38	0	5	3
June	15	65	4	5	4
First half 1933	73	368	26	25	7
First half 1932	75	1,462	34	23	8
Difference	2	1,094	8	3	1

Completions by Counties

County—	Comp.	Prod.	Dry	Gas	Abd.
Gibson	4	0	0	4	3
Pike	13	0	4	9	1
Sullivan	4	0	4	1	4
Daviess	3	5	1	1	0
Vigo	1	0	1	1	0
Perry	7	15	4	0	0
Spencer	4	20	1	0	0
Knox	2	0	1	1	0
Hancock	3	5	0	2	0
Harrison	4	0	0	4	9
Vanderburg	19	313	6	0	0
Orange	1	0	1	0	0
Henry	1	0	0	1	0
Allen	1	0	0	1	0
Martin	2	10	1	0	0
Monroe	2	0	1	1	0
Tippecanoe	2	0	1	1	0
First half 1933	73	368	26	25	8

ILLINOIS FIELDS
Summary of Wells Completed in First Half of 1933

Month—	Comp.	Prod.	Dry	Gas	Abd.
January	1	5	0	0	6
February	3	0	2	1	2
March	1	0	1	0	0
April	1	0	1	0	1
May	0	0	0	0	0
June	2	10	1	0	0
First half 1933	8	15	5	1	9
First half 1932	13	50	10	2	131
Difference	10	35	5	1	122

Summary by Counties

County—	Comp.	Prod.	Dry	Gas	Abd.
Marion	1	5	0	0	6
Crawford	3	0	2	1	0
Lawrence	2	10	1	0	3
Wabash	1	0	1	0	1
Bond	1	0	1	0	0
First half 1933	8	15	5	1	9

SOUTHWEST TEXAS
Completions by Counties for First Six Months of 1933

	Comp.	Prod.	Dry	Gas
Austin	2	0	2	0
Aransas	1	0	1	0
Atascosa	2	0	2	0
Bandera	2	0	2	0
Bastrop	29	10,700	19	0
Bee	17	285	11	2
Bexar	33	158	19	0
Blanco	3	0	3	0
Brooks	1	0	1	0
Comal	1	0	1	0
Caldwell	11	82	8	0
Dimmitt	3	0	3	0
Duval	129	44,610	36	12
Frio	2	0	2	0
Gonzales	2	0	2	0
Goliad	2	0	2	0
Guadalupe	17	0	17	0
Hidalgo	2	0	2	0
Jim Hogg	6	0	6	0
Jim Wells	3	100	2	0
Karnes	5	192	4	0
Kendall	1	0	1	0
Live Oak	13	20	12	0
Maverick	3	0	3	0
McMullen	18	50	17	0
Medina	5	0	5	0
Milam	5	0	5	0
Nueces	27	2,965	13	3
San Patricio	2	0	0	2
Starr	55	173	44	2
Travis	7	0	7	0
Uvalde	1	0	1	0
Williamson	3	0	3	0
Webb	57	7,974	30	4
Zapata	23	615	14	3
Total	493	67,930	300	28
First 6 mos. 1932	369	33,045	189	24
Difference	129	34,885	121	4

Completions by Months

	Comp.	Prod.	Dry	Gas
January	80	21,639	38	3
February	115	12,949	69	9
March	85	10,591	53	7
April	86	6,827	49	3
May	58	1,991	36	2
June	74	11,925	55	3
Total	493	67,930	300	28

North Central, West Texas and Panhandle Fields Held Back By the East Texas Flood of Oil

By L. E. BREDBERG
Fort Worth Bureau, The Oil and Gas Journal

Low prices and lack of demand for West Texas Oil had its effect on drilling activities in that district during the first six months of the year. Wildcatting was curtailed to a new low, and field drilling was held to a minimum. Ward County led in the amount of completed producers during the year, a few wildcats and semiwildcats being completed as dry in that county. There were 52 wells completed in the county, the majority of them in the scattered areas of the southern part while several were also brought in in the O'Brien area near the Winkler County line. Seven tests were abandoned in the county.

The larger activity in Ward County was due to cheap drilling in the southern part of the county; major companies subleasing to independents for drilling on an interest basis, and pipe line companies and refineries taking a larger part of the oil produced than from other pools in the district. Activities are expected to continue in that part of the county.

The Cowden area of northern Ector County had two small producers drilled in during the past six months, and the Addis area has had three. Two tests are slated to start immediately in the Addis and Cowden areas. Costly drilling and small wells may have their effect on retarding drilling in these districts during the year, but increases in crude oil prices may offset these stagnating influences.

Ordovician Tests Continue

One wildcat Ordovician test was abandoned in the district and three others were started. The Stanolind Oil & Gas Co. plugged its No. 1 Todd, in Section 67, Block UV, G.C.&S.F. Survey, after drilling to a total depth of 8,040 feet, plugging back and treating with acid with no successful results. It encountered a good saturated lime streak at 7,357 feet, which was tested, but failed to produce. Two shallow oil producers were drilled on this unitized block, and an offset block of the Continental Oil Co., validating the leases held by the various companies. One gasser was drilled in the shallow area, and four other tests proved dry.

The Humble Oil & Refining Co. is drilling an Ordovician test 9 miles west of the Yates Field, Pecos County, in Section 44, Block Z, T.C. Survey. It will go to 7,000 feet unless oil and gas is found in commercial quantities above that depth.

The Gulf Production Co. is also drilling an Ordovician test in its McElroy Pool. Location is in Section 197, Block F, on the Crane-Upton County line. These two tests will be closely watched until they are completed.

Atkins Brothers and others started an Ordovician test on the Reed ranch in the Mason and Perry Subdivision No. 39, near the town of Carlsbad, Tom Green County.

Another test is being drilled in western Crane County. Loffland Brothers are drilling it on acreage donated by the Gulf Production Co. Location is in Section 9, Block 27, Public School lands, in the Tubbs area where a discovery well came in three years ago, producing below the water level. Two dry holes were drilled in which is considered as worthy of but little attention.

Big Lake's Output

Around 19,000,000 bbls. of high gravity oil has been taken out of the Ordovician lime producing wells in the Big Lake Field, but the majority of these wells are now showing a large volume of water, while six wells are standing dead and will probably not be brought back as commercial producers although the companies owning them are plugging back in an effort to shut off the water and increase the production. It looks as if the areas had been almost drained as far as deep production is concerned. Such an average per well yield, however, is exceptionally high.

Another deep test abandoned in the West Texas district was Cranfill & Reynolds' No. 1 George, in Section 200, Block 1, B.B.B.&C. Survey, in northeastern Fisher County. It was drilled to

North Texas

Daily Average and Monthly Production First Six Months of 1933

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
WICHITA COUNTY:							
Burkburnett—							
Daily average	3,113	2,914	2,877	2,913	2,825	2,806	
Month	96,653	81,592	89,187	90,390	87,575	84,180	529,582
Electra—							
Daily average	7,864	7,813	7,721	7,699	7,561	7,482	
Month	243,784	218,764	239,351	230,970	232,531	224,460	1,389,860
Iowa Park, K.M.A.—							
Daily average	2,549	2,593	2,562	2,583	2,442	2,393	
Month	79,019	72,604	79,422	77,490	75,702	71,790	456,027
Sunshine Hill—							
Daily average	522	516	505	503	497	483	
Month	16,182	14,448	15,655	15,090	15,407	14,490	91,372
Wichita County Miscellaneous—							
Daily average	2,472	2,584	2,572	2,566	2,492	2,416	
Month	76,632	72,352	79,732	76,980	77,252	72,480	455,428
ARCHER COUNTY:							
Daily average	11,203	11,294	11,273	11,519	11,371	10,644	
Month	347,293	316,232	349,463	345,570	352,501	319,320	2,030,379
CLAY COUNTY:							
Daily average	462	521	507	489	495	477	
Month	14,332	14,588	15,717	14,670	15,345	14,310	88,962
WILBARGER COUNTY:							
Daily average	7,987	8,039	7,994	8,203	7,689	6,890	
Month	247,597	225,092	247,814	246,090	238,359	206,700	1,411,652
MONTAGUE COUNTY:							
Daily average	3,977	3,986	3,999	4,181	4,170	3,916	
Month	123,287	111,608	123,969	125,430	129,270	117,480	731,044
YOUNG COUNTY:							
Daily average	8,482	8,595	8,518	8,507	7,874	7,410	
Month	262,942	240,669	264,058	255,210	234,794	222,300	1,479,964
BAYLOR COUNTY:							
Daily average	390	382	372	352	340	341	
Month	12,090	10,696	11,532	10,560	10,540	10,236	65,648
COOKE COUNTY:							
Daily average	1,522	1,563	1,550	1,597	1,572	1,483	
Month	47,182	43,764	48,050	47,910	48,732	44,490	280,128
FOARD COUNTY:							
Daily average	55	65	70	66	65	62	
Month	1,705	1,820	2,170	1,980	2,015	1,860	11,550
Daily average	50,698	50,865	50,520	51,278	49,033	46,803	49,843
Total first six months 1933	1,568,693	1,424,220	1,566,120	1,538,340	1,520,023	1,404,090	9,021,486
Total first six months 1932	1,587,262	1,557,764	1,624,803	1,573,380	1,654,625	1,620,540	9,618,374
Total first six months 1931	1,997,361	1,680,504	1,876,306	1,790,400	1,809,872	1,771,680	10,926,124
Total first six months 1930	2,768,293	2,562,793	2,860,587	3,053,580	3,153,351	3,042,020	17,442,732
Total first six months 1929	2,794,619	2,412,788	2,760,705	2,729,250	2,793,236	2,759,550	16,250,198
Total first six months 1928	2,441,002	2,247,790	2,483,100	2,465,970	2,600,559	2,687,297	14,925,628

Central Texas

Daily Average and Monthly Production First Six Months of 1933

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
BROWN COUNTY:							
Daily average	2,510	2,567	2,570	2,454	2,534	2,315	
Month	77,810	71,876	79,670	73,620	78,554	69,450	450,980
CALLAHAN COUNTY:							
Daily average	2,154	2,164	2,112	2,062	1,965	1,937	
Month	66,774	60,592	65,472	61,860	60,915	58,110	373,723
COLEMAN COUNTY:							
Daily average	2,207	2,231	2,158	1,997	1,779	1,742	
Month	68,417	62,468	66,898	59,910	55,149	52,260	365,102
COMANCHE COUNTY:							
Daily average	985	967	909	875	898	864	
Month	30,535	27,076	27,900	26,250	27,838	25,920	165,519
EASTLAND COUNTY:							
Daily average	2,643	2,636	2,599	2,560	2,307	2,376	
Month	81,933	73,808	80,569	76,800	71,517	68,280	452,907
JACK COUNTY:							
Daily average	1,399	1,378	1,343	1,372	1,312	1,284	
Month	43,369	38,584	41,633	41,160	40,672	38,520	243,938
JONES COUNTY:							
Daily average	1,423	1,482	1,550	1,517	1,580	1,494	
Month	44,113	41,496	48,050	45,510	48,980	44,820	272,969
PALO PINTO COUNTY:							
Daily average	409	441	435	400	362	354	
Month	12,679	12,348	13,485	12,000	11,222	10,620	72,354
RUNNELS COUNTY:							
Daily average	63	55	40	37	49	41	
Month	1,953	1,540	1,240	1,110	1,519	1,230	8,592
SHACKELFORD COUNTY:							
Daily average	3,394	3,425	3,364	3,285	3,177	2,816	
Month	105,214	95,900	104,284	97,950	98,487	84,480	586,315
STEPHENS COUNTY:							
Daily average	4,345	4,531	4,806	5,018	5,218	4,610	
Month	134,695	126,868	148,986	150,540	161,758	138,300	861,147
THROCKMORTON COUNTY:							
Daily average	506	546	550	533	540	529	
Month	15,686	15,288	17,050	15,990	16,740	15,870	96,624
HASKELL COUNTY:							
Daily average	33	31	31	25	30	37	
Month	1,023	869	961	750	930	810	5,342
TAYLOR COUNTY:							
Daily average	118	91	80	51	69	56	
Month	3,658	2,548	2,480	1,530	2,139	1,680	14,035
Daily average	22,189	22,545	22,538	22,166	21,830	20,345	21,931
Total first six months 1933	687,859	631,360	698,678	664,980	676,420	610,350	3,969,547
Total first six months 1932	644,118	626,458	666,128	647,130	680,481	661,440	3,925,755
Total first six months 1931	653,356	625,516	669,600	695,960	741,768	716,376	4,103,576
Total first six months 1930	1,336,689	1,197,784	1,265,702	1,220,510	1,318,176	1,172,640	7,399,501
Total first six months 1929	1,574,423	1,368,504	1,515,349	1,451,880	1,539,057	1,471,350	8,920,263
Total first six months 1928	1,402,754	1,381,096	1,466,020	1,422,150	1,477,119	1,473,111	8,621,259

25 CANDLES ON THE CAKE FOR *Toncan* IRON

No matter where you go you will find someone who thinks that Toncan Iron is something new—an infant among industrial products. As a matter of fact, it is a rather lusty infant—twenty-five years old this year, and still growing.

As it was introduced twenty-five years ago, it was a commercially pure iron with rust-accelerating impurities reduced to lowest practicable limits. Later copper was alloyed with the iron to make it more resistant to attack. Then molybdenum became an important part of the analysis when all tests proved that the addition of this element produced a true alloy with a degree of resistance to rust never before attained with ferrous metals, except in the stainless alloys.

Such is the Toncan Iron of today that is used in making Toncan Iron Pipe. Of such material is the pipe that is writing new records for longer life in service in factories, chemical plants, aboard ship, in power plants, on railroad cars and locomotives, in oil wells and refineries, in coal mines—wherever corrosion or vibration quickly saps the life from other pipe that may cost a trifle less to buy but that in the end proves far more expensive.

There's a new edition of "Pipe for Permanence" coming off the press in a few days. Send your request for a copy and it will be mailed to you just as soon as it is available.

TONCAN COPPER MOLYBDENUM IRON PIPE

REPUBLIC STEEL CORPORATION
GENERAL OFFICES YOUNGSTOWN, OHIO

6,494 feet, plugged back and given a shot at 5,840-6,060 feet, but with no success.

There were three small refineries erected in the district during the past six months; one near the Runnels County Pool, another at Trent in Taylor County, and one at El Paso. The first will operate on crude from the small pool north of Ballinger in Runnels County; the second will operate on crude from the Noodle Creek Pool in Jones County, and the third on Ward County crude.

NORTH CENTRAL TEXAS
Summary of Field Operations First Six Months of 1933
Completions by Months

Month—	Comp.	Prod.	Abd.	Gas
January	96	1,177	53	5
February	78	959	54	3
March	78	572	54	5
April	91	4,354	61	2
May	78	786	52	4
June	44	2,533	25	0
Total	465	10,381	299	19

Completions by Counties

County—	Comp.	Prod.	Abd.	Gas
Archer	102	3,807	59	0
Baylor	2	0	2	0
Brown	15	56	9	0
Callahan	29	13	22	5
Clay	15	113	11	0
Coleman	10	143	5	0
Cooke	5	0	5	0
Denton	2	0	2	0
Eastland	12	255	6	1
Erath	1	0	0	1
Grayson	3	0	3	0
Jack	28	159	22	1
Montague	2	0	2	0
Palo Pinto	22	70	12	6
Parker	1	0	1	0
Shackelford	45	586	24	2
Stephens	5	0	3	2
Throckmorton	7	0	6	1
Taylor	1	0	1	0
Wichita	34	553	20	0
Wilbarger	10	30	8	0
Young	114	4,597	76	0
Total	465	10,381	299	19
First 6 mos. 1932	518	15,206	284	27
Difference	53	4,825	15	8

WEST TEXAS
Summary of Field Operations First Six Months of 1933
Completions by Months

Month—	Comp.	Prod.	Abd.	Gas
January	24	6,123	1	0
February	24	5,968	6	0
March	18	1,116	5	0
April	34	6,891	9	0
May	11	768	3	0
June	16	3,217	5	0
Total	127	24,083	29	0

Completions by Counties

County—	Comp.	Prod.	Abd.	Gas
Crane	1	922	0	0
Crockett	6	260	5	0
Comanche	1	0	1	0
Concho	2	0	2	0
Culberson	1	0	1	0
Ector	4	324	1	0
Fisher	2	750	1	0
Garza	2	19	0	0
Glasscock	9	4,041	1	0
Howard	14	1,377	2	0
Jones	2	539	0	0
Loving	4	530	1	0
Pecos	6	249	1	0
Reagan	6	4,878	2	0
Reeves	1	0	1	0
Scurry	1	0	1	0
Upton	4	719	0	0
Ward	52	8,297	7	0
Winkler	9	1,178	2	0
Total	127	24,083	29	0
First 6 mos. 1932	90	9,343	24	2
Difference	37	14,740	5	2

TEXAS PANHANDLE
Summary of Field Operations First Six Months of 1933
Completions by Months

Month—	Comp.	Prod.	Abd.	Gas
January	15	2,070	2	2
February	12	1,939	3	1
March	14	2,049	1	2
April	19	2,527	2	2
May	17	1,907	1	5
June	10	4,914	0	2
Total	87	15,406	9	14

Completions by Counties

County—	Comp.	Prod.	Abd.	Gas
Carson	13	1,370	1	6
Cottle	1	0	1	0
Collingsworth	2	0	2	0
Gray	52	12,134	4	4
Hutchinson	13	1,692	1	1
Moore	1	0	0	1
Wheeler	5	160	0	2
Total	87	15,406	9	14
First 6 mos. 1932	65	13,869	6	16
Difference	22	1,537	3	2

The West Texas district can expect to remain only semiattractive until the East Texas Field shows greater decline, and until companies have given the Gulf Coast a big lease and drilling "play." East Texas is not overly active as far as wildcatting is concerned but the field can produce sufficient oil to keep the entire industry in a turmoil unless regulated.

RANGER AND WICHITA FALLS

The Ranger district has been practically dormant during the past six months, but little pool and wildcat drilling taking place.

Many small areas were opened in the Wichita Falls district, and many extensions made, the majority of them from the shallow producing horizons which produce prolifically in that district. None of the pools or extensions have been of importance, only matching nearby pools in size and production, or proving smaller.

Several hundred wells have been treated with acid in the lime areas of the two districts, the treatment proving successful in the greater number of cases.

One of the deepest tests drilled in this district during the year was Texas Co.'s No. 1 E. L. Burns, in the northwest half of T.E.&L. Survey No. 1,986, east central Young County. It is located in the center of a 1,500-acre block, 2 miles southeast of the nearest Strawn and Bend producing area, in the Knox Pool. The well flowed 127 bbls. the first 24 hours after a 180-quart shot from 4,102-40 feet. It was drilled to a total depth

(Continued on Page 83)

Texas Panhandle

Daily Average and Monthly Production First Six Months of 1933

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
CARSON COUNTY:							
Daily average	4,887	4,546	4,806	4,054	4,058	4,063	
Month	151,497	127,289	148,986	121,620	125,798	121,890	797,079
HUTCHINSON COUNTY:							
Daily average	10,687	10,914	11,158	11,224	10,373	10,116	
Month	331,297	305,592	345,898	337,020	321,563	303,480	1,944,850
WHEELER COUNTY:							
Daily average	307	244	314	375	318	297	
Month	9,517	6,832	9,734	11,250	9,858	8,910	56,101
GRAY COUNTY:							
Daily average	27,549	26,962	31,561	29,975	29,063	27,989	
Month	854,019	754,936	978,391	899,250	900,953	839,670	5,227,219
MOORE COUNTY:							
Daily average	906	1,165	1,041	877	872	835	
Month	28,086	32,620	32,271	26,310	27,032	25,050	171,369
Daily average	44,336	43,831	48,880	46,515	44,684	43,300	45,285
Total first six months 1933	1,374,416	1,227,268	1,515,280	1,395,450	1,385,204	1,299,000	8,196,618
Total first six months 1932	1,537,104	1,392,464	1,461,526	1,523,850	1,605,397	1,603,740	9,124,081
Total first six months 1931	1,754,042	1,499,736	1,592,162	1,622,220	1,658,202	1,764,960	10,092,312
Total first six months 1930	2,656,398	2,467,080	2,750,971	2,835,960	3,297,315	3,156,941	17,163,665
Total first six months 1929	1,852,878	1,583,196	1,846,213	1,834,980	2,036,579	2,623,630	11,855,526
Total first six months 1928	2,408,359	2,287,607	2,263,173	2,044,020	2,115,469	1,965,434	13,074,062

West Texas

Daily Average and Monthly Production First Six Months of 1933

Field and County—	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
CHURCH-FIELDS, CRANE:							
Daily average	5,005	4,938	4,932	4,939	4,967	4,862	
Month	155,155	138,264	152,892	148,170	152,977	145,860	894,319
McELROY, CRANE:							
Daily average	8,810	8,962	8,955	8,972	9,006	9,017	
Month	273,110	250,936	277,605	269,160	279,186	270,510	1,620,507
SAND HILLS, CRANE:							
Daily average	28	26	28	30	29	25	
Month	868	728	868	900	899	750	5,013
TODD, CROCKETT:							
Daily average	35	81	60	41	27	22	
Month	1,085	2,268	1,860	1,230	837	660	7,940
WORLD, CROCKETT:							
Daily average	1,018	1,012	982	916	894	911	
Month	31,558	28,336	30,442	27,480	27,714	27,330	172,860
COWDEN, ECTOR:							
Daily average	27	45	69	64	31	25	
Month	837	1,260	2,139	1,920	961	750	7,867
PENN, ECTOR:							
Dail yaverage	4,003	3,971	3,973	3,981	3,968	3,992	
Month	124,093	111,188	123,163	119,430	123,008	119,760	720,642
ODESSA, ECTOR:							
Daily average	252	275	311	272	210	216	
Month	7,812	10,500	9,641	8,160	6,510	64,80	49,103
FISHER, FISHER:							
Daily average	639	1,575	3,247	3,161	2,875	2,622	
Month	19,809	44,100	100,657	94,830	89,125	78,690	427,211
BOREN, GARZA:							
Daily average	.....	.....	30	24	26	24	
Month	.....	.....	930	720	806	720	3,176
CHALK-ROBERTS, HOWARD:							
Daily average	14,011	13,986	15,858	15,809	15,911	16,025	
Month	434,341	391,608	491,598	474,270	493,241	480,840	2,765,898
MERTZON, IRION:							
Daily average	20	30	21	14	12	10	
Month	620	840	651	420	372	300	3,203
WHEAT, LOVING:							
Daily average	3,027	3,194	3,267	3,120	3,073	2,786	
Month	93,837	89,432	101,277	93,600	95,263	83,580	556,989
IATAN, MITCHELL:							
Daily average	1,579	1,641	1,522	1,585	1,597	1,419	
Month	48,949	43,148	47,182	47,550	46,717	42,570	276,116
COURTNEY, PECOS:							
Daily average	30	.....	.....	65	30	39	
Month	930	.....	.....	1,950	930	1,170	4,980
MASTERSON, PECOS:							
Daily average	.....	.....	.....	10	.....	.....	
Month	.....	.....	.....	300	.....	.....	300
PECOS VALLEY, PECOS:							
Daily average	295	280	226	220	195	208	
Month	9,145	7,840	7,316	6,600	6,045	6,240	43,186
TAYLOR-LINK, PECOS:							
Daily average	702	672	612	582	568	520	
Month	21,762	18,816	18,972	17,460	15,748	15,600	108,358
YATES, PECOS:							
Daily average	62,424	62,138	61,949	62,577	62,063	62,067	
Month	1,935,144	1,741,264	1,920,419	1,877,310	1,923,953	1,862,010	11,260,100
BIG LAKE, REAGAN:							
Daily average	19,496	18,600	20,894	19,511	19,540	24,014	
Month	604,376	520,800	647,714	585,330	605,740	720,420	3,684,380
HURDLE, UPTON:							
Daily average	3,979	4,075	4,183	4,279	4,133	3,917	
Month	123,349	114,100	129,673	128,370	128,092	117,510	741,094
GRAND FALLS, WARD:							
Daily average	2,822	3,047	3,115	3,275	3,417	3,021	
Month	87,482	85,316	96,565	98,250	105,927	90,630	564,470
O'BRIEN, WARD:							
Daily average	4,180	4,535	4,464	4,656	4,897	4,758	
Month	129,580	126,980	138,384	139,680	151,807	142,740	829,171
SHIPLEY, WARD:							
Daily average	17	.....	.....	.....	.....	.....	
Month	372	.....	.....	.....	.....	.....	372
HENDRICK, WINKLER:							
Daily average	24,535	24,236	23,334	22,569	21,501	21,223	
Month	760,585	678,608	723,354	677,070	666,531	636,690	4,142,838
NORTH WINKLER, WINKLER:							
Daily average	1,845	1,760	1,819	1,848	1,889	2,061	
Month	57,195	49,280	56,389	55,440	58,559	61,830	338,693
Daily average	158,774	159,129	163,861	162,520	160,708	162,798	161,485
Total first six months 1933	4,921,994	4,455,612	5,079,691	4,875,600	4,981,948	4,913,940	29,228,785
Total first six months 1932	5,784,136	4,991,045	5,528,137	5,551,500	5,624,237	5,538,870	32,907,924
Total first six months 1931	6,817,675	6,813,680	7,291,190	7,062,640	6,404,972	6,300,510	40,690,647
Total first six months 1930	10,608,882	9,574,215	10,412,647	9,436,801	9,661,721	9,130,229	58,824,487
Total first six months 1929	11,380,841	9,966,066	11,609,104	10,599,784	10,990,292	10,987,539	65,533,136
Total first six months 1928	8,821,701	9,036,190	10,380,977	11,149,642	9,873,665	8,947,700	58,209,776
Total first six months 1927	2,126,352	1,857,800	2,331,510	2,752,080	3,514,935	3,339,150	15,919,827

Rocky Mountain Fields Accomplished Little in New Discoveries in the First Half of 1933

By TOLBERT R. INGRAM
Staff Correspondent, Rocky Mountain Area

The Rocky Mountain division, made up of Montana, Wyoming, Colorado, New Mexico and Utah, experienced a very dull half year in 1933, and production fell off materially in most of the fields of the big territory.

The principal developments in New Mexico in the first half of 1933 included the drilling of several flank wells in the Hobbs Pool which revealed the edge of the productive area on the north, extended it slightly on the northwest and added a few units to production on the southeast; the drilling of two wells in the Lea Pool which defined the area on the northwest and extended it slightly on the east; the completion of two good producers in the Jal area and another in the Eunice area, and the location of a new high along the line of production in Eddy County.

The proration agreement between the State of New Mexico and the operators in the Hobbs Pool was renewed last January with no important change except for a provision limiting the minimum output to 30,000 bbls. daily and another giving any party to the agreement the right to withdraw on 30 days' notice. In April a majority of the operators voted in favor of changing the basis of proration from 75 per cent on potential and 25 per cent on acreage to 60 per cent on potential and 40 per cent on acreage. However, all the operators did not sign and the basis for allotting production was not changed. The daily allowable outlet was 21,306 bbls. in January, but following the renewal of the agreement it was increased to 30,334 bbls. and at the end of the six months the allowable was 33,502 bbls. No additional progress on plans to unitize the field was reported.

Marks Production Limits

The Humble Oil & Refining Co.'s No. 1 Hardin, SW cor. NW, Section 18-18-38, marked the limits of production on the north. It was drilled to 4,720 feet The Amerada Petroleum Corp.'s No. 3 Hardin, NW cor. SW, Section 18, a south offset to the Humble well, also drew a blank at a total depth of 4,180 feet, but plugged back and produced from above the pay, making 648 bbls. of oil and 840,000 feet of gas initial.

A group of offsets drilled around the center of the section line between Sections 24 and 25-18-37 by the Texas Co., the Texas Pacific Coal & Oil Co. and the Continental Oil Co. extended the productive area half a mile to the west on the northwest. The most farthest west of these was the Continental Oil Co.'s No. 1-B State-25, NE cor. NW, Section 25-18-37, which was completed at 4,225 feet for 5,216 bbls. open flow and 4,926,000 feet of gas. It topped the brown lime at 2,920 feet and the elevation is 3,668 feet. Slight extensions of from one to two locations east were made on the northeast flanks in wells drilled by the Skelly Oil Co. in its No. 1 State, SW SW, Section 17-18-38, and the Humble Oil & Refining Co.'s No. 3-B Bowers, SW SE SE, Section 20-18-38. The last named made 12,150 bbls. initial and the Skelly well at 4,260 feet made 2,824 bbls. of oil and 17 per cent water. The remainder of the drilling was inside except for several wells in the extreme southeast which came in as small producers and revealed nothing that was not generally expected.

The limit of the Lea Pool on the northwest was found in the Texas Co.'s No. 1-B Lynch, C SW NW, Section 34-20-34, which was plugged and abandoned at 3,808 feet.

The Atlantic Oil Producing Co. proved up about one-fourth of a mile of territory in its No. 1-B State, C NE SE, Section 8-21-36, in the Eunice Pool, a south offset to the Tidal Oil Co.'s No. 1 State, C SW NE, Section 8. The interesting feature of this test was the increased production as compared with its offset. The Tidal well made 524 bbls. initial at a total depth of 3,985 feet and the Atlantic well made 1,008 bbls. at 3,901 feet, total depth. The last named was given acid treatment to open up the lime and responded with about double the output of the other well.

The most important development in the Jal area, where two wells were drilled, was in the Continental Oil Co.'s No. 1-B Sholes-13, C SW NW, Section 13-25-36, which made 2,280 bbls. of oil and 40,000,000 feet of gas first 24 hours at a total depth of 3,370 feet. It shut off more than 100,000,000 feet of gas per day in upper horizons. This is the best oil well drilled in the Jal Pool and gives some indications of the possibilities when conditions warrant development. It was an east offset to a well drilled by the Humble Oil & Refining Co. in 1930 which made 139 bbls. initial.

NEW MEXICO
Summary of Wells Completed First Six Months of 1933

County—	Comp.	Prod.	Dry	Gas
De Baca	1	0	1	0
Dona Ana	1	0	1	0
Eddy	5	98	2	0
Lea	28	121,332	3	0
San Juan	2	35	0	0
Santa Fe	1	0	1	0
Total	38	121,465	8	0
Same period 1932	23	62,810	6	2
Difference	15	58,655	2	2

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	5	36,673	0	0
February	3	39,697	2	0
March	7	21,156	1	0
April	9	9,780	3	0
May	3	14,030	2	0
June	1	129	0	0
Total	38	121,465	8	0

In Eddy County to the east of a group of gas wells in Section 22-17-29, in the Jackson area, and the Grayburg Oil Co.'s No. 2 Keeley, C SE NE, Section 24, Harry Leonard and the Barnsdall Oil Corp. found a new high in their No. 1 Dodd, SW SE SW, Section 22-17-29. Leonard acquired the gas rights and the Barnsdall company was after oil. It had gas at 2,280-93 feet which gauged 6,742,000 feet with a pressure of 750 pounds. It was bradenheaded off and saved and the well was continued to 2,993 feet where it was completed for 24 bbls. of oil. The elevation is 3,539 feet. The top of the salt was at 235 feet, the top of the brown lime at 2,089 feet and the top of the Terry at 2,595 feet.

COLORADO

The most important discovery in Colorado so far this year was made on the Rangely Dome, in the northwestern corner of Rio Blanco County, a few miles east of the Utah boundary, in the California Co.'s No. 1 California-Raven, NW SE, Section 30-2n-102. This well encountered oil last fall, but the value of the discovery was not fully disclosed until this year and its full significance is not yet definitely known. The well has not

Colorado

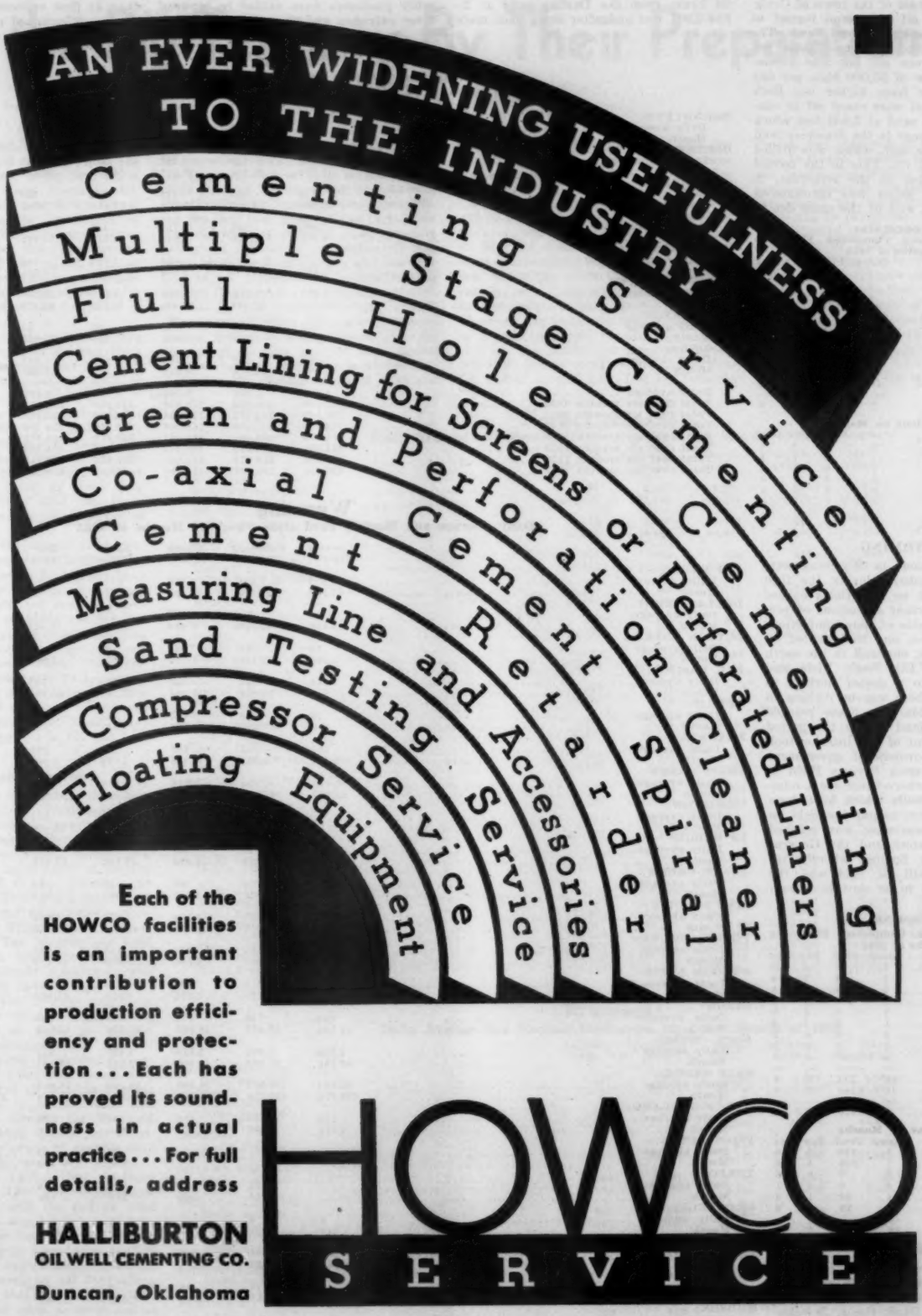
Daily Average and Monthly Production First Six Months of 1933

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
CRAIG:							
Daily average	546	643	664	524	587	556	
Month	16,740	18,004	20,584	15,720	18,197	16,680	105,925
FORT COLLINS-WELLINGTON:							
Daily average	784	587	727	563	664	607	
Month	24,304	16,436	22,537	16,890	20,584	18,210	118,961
FLORENCE:							
Daily average	283	231	286	217	249	229	
Month	8,773	6,468	8,860	6,510	7,719	6,870	44,400
ILES:							
Daily average	538	499	508	482	611	573	
Month	16,678	13,972	15,748	14,460	18,941	17,196	96,989
ORCHARD:							
Daily average	191	199	145	120	143	151	
Month	5,921	5,572	4,495	3,600	4,433	4,530	28,551
RANGELY:							
Daily average	96	51	59	81	79	80	
Month	2,976	1,428	1,829	2,430	2,449	2,400	13,512
TOW CREEK:							
Daily average	259	267	264	222	275	243	
Month	8,029	7,476	8,184	6,660	8,525	7,290	46,164
Daily average	2,691	2,477	2,627	2,209	2,508	2,439	2,511
Total first six months 1933	83,421	69,356	81,437	66,270	80,848	73,170	454,502
Total first six months 1932	107,384	104,052	111,817	101,580	100,440	89,520	614,793
Total first six months 1931	131,471	119,336	122,296	122,910	129,270	132,960	758,242
Total first six months 1930	151,187	146,860	144,274	133,590	137,175	136,950	850,036
Total first six months 1929	215,016	182,280	213,125	197,130	223,727	224,220	1,255,498
Total first six months 1928	234,835	232,625	259,562	203,610	204,383	218,940	1,353,756
Total first six months 1927	.....	.....	.....	.....	.....	.....	1,398,539

New Mexico

Daily Average and Monthly Production First Six Months of 1933

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
HOGBACK:							
Daily average	323	318	221	213	208	211	
Month	10,013	8,820	6,851	6,390	6,448	6,330	44,852
RATTLESNAKE:							
Daily average	484	475	597	677	673	667	
Month	15,004	13,300	18,507	20,310	20,863	20,010	107,994
TABLE MESA:							
Daily average	97	88	81	86	100	79	
Month	3,007	2,464	2,511	2,580	3,100	2,370	16,032
ARTESIA:							
Daily average	469	473	467	647	515	531	
Month	14,539	13,244	14,477	19,410	15,965	15,930	93,565
HOBBS:							
Daily average	25,918	30,277	30,731	28,876	28,665	28,804	
Month	803,458	847,756	952,661	866,280	888,615	864,120	5,222,890
JAL:							
Daily average	1,047	1,061	1,210	1,160	1,195	1,471	
Month	32,457	29,708	37,510	34,806	37,045	44,130	215,656
EUNICE:							
Daily average	506	514	462	491	571	562	
Month	15,686	14,392	14,322	14,730	17,701	16,860	93,691
MALJAMAR-JACKSON:							
Daily average	995	865	849	941	902	908	
Month	30,845	24,220	26,319	28,230	27,962	27,240	164,816
LEA CITY & T. & P.:							
Daily average	2,254	2,396	2,436	2,410	2,420	2,210	
Month	70,504	66,920	75,516	72,300	75,020	66,300	426,860
Daily average	32,123	36,453	37,054	35,581	35,249	35,443	35,284
Total first six months 1933	995,813	1,020,324	1,148,674	1,065,030	1,092,719	1,063,290	6,386,350
Total first six months 1932	1,152,766	1,056,702	1,126,354	1,096,320	1,109,272	1,069,020	6,610,435
Total first six months 1931	1,253,304	1,158,220	1,252,589	1,199,730	1,235,259	1,223,070	7,522,672
Total first six months 1930	315,549	239,532	287,525	274,950	558,585	636,040	2,511,111
Total first six months 1929	87,668	83,384	89,621	95,440	96,751	91,762	544,626
Total first six months 1928	74,865	59,981	69,347	88,160	73,470	58,860	424,683
Total first six months 1927	136,679	138,460	148,738	142,140	112,530	102,120	780,667



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been completed and the company has not yet released official data on it.

Colorado had a significant oil discovery in Moffat County, but as the well is being drilled for gas, it was cased off without a test. This was in the Rocky Mountain Gas Co.'s No. 1 Eberle, SE SW SE, Section 9-6n-91, on the Craig Dome, 3 miles west of the town of Craig. It encountered oil in a sand topped at 1,278 feet in the upper Mesa Verde. The flow was estimated at 50 to 75 bbls. per day of light green oil, but was accompanied by a flow of 25,000 bbls. per day of warm water from higher up. Both the water and oil were cased off to continue to the gas sand at 2,800 feet which was found last year in the discovery well 1,500 feet to the east, which was drilled by the Ohio Oil Co. This is the second well to be drilled on the structure. A similar flow of water was encountered in the discovery well at the same depth.

COLORADO

Summary of Wells Completed First Six Months of 1933

County—	Comp.	Prod.	Dry	Gas
Archuleta	1	0	1	0
Fremont	3	0	3	0
La Plata	1	0	1	0
Las Animas	1	0	1	0
Larimer	3	0	3	0
Lincoln	1	0	1	0
Rio Blanco	1	0	0	1
Weld	5	0	4	1
Total	16	0	14	2
Same period 1932	18	57	14	2
Difference	2	57	0	0

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	0	0	0	0
February	4	0	3	1
March	9	0	8	1
April	0	0	0	0
May	0	0	0	0
June	3	0	3	0
Total	16	0	14	2

WYOMING

Drilling operations in Wyoming were almost at a standstill during the first half of 1933 with no new fields opened and no new important extensions of producing pools. Outside of four completions in the Osage Pool, one well drilled on the Frannie Dome, one well in the south extension of the Elk Basin Field and one test drilled to a deeper horizon in the Big Muddy, there was no drilling in the producing fields. The State reduced rentals on state land during the period and the Department of the Interior took steps to compel owners of government leases in the Maverick Springs Field in Fremont County, where there are a number of black oil wells which have been shut in for 15 years to put the field on production. A compromise was reached between the operators and the Government on Maverick Springs whereby increased rentals will be paid and the field will continue to be shut in for an indefinite time.

WYOMING

Summary of Wells Completed First Six Months of 1933

County—	Comp.	Prod.	Dry	Gas
Carbon	1	0	1	0
Lincoln	1	0	1	0
Natrona	3	50	1	0
Park	2	546	0	1
Platte	1	0	1	0
Sublet	1	0	1	0
Sweetwater	1	0	0	1
Uinta	2	0	2	0
Weston	4	135	1	0
Total	16	531	8	2
Same period 1932	14	1,546	5	0
Difference	2	1,015	3	2

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	1	100	0	0
February	7	366	5	0
March	0	0	0	0
April	2	0	1	1
May	4	50	1	1
June	2	15	1	0
Total	16	531	8	2

MONTANA

The principal developments in Montana in the first half of 1933 were the opening of a new pool in Glacier County, on the North Cut Bank Dome, 3 miles south of the Canadian boundary, the addition of several miles of productive area to the Cut Bank Field and a half mile extension of the Dry Creek Field in Carbon County.

There were 12 wells completed in the Cut Bank Field during the six months with an average initial production of 90 bbls. each. The most northerly of these was the Santa Rita Oil & Gas Co.'s No. 1 Blackfoot, C SW NE, Section 15-36-6w, in the Blackfeet Indian Reservation and 4 miles north of the nearest producer. Its elevation is 3,874 feet and it was completed at 2,903 feet, 1 foot in the Ellis shale. It swabbed 135 bbls. the first 24 hours from the Darling sand at 2,884-2,901 feet and after being shot made 167 bbls. first 24 hours on the pump and settled to an average of 75 bbls.

The Cut Bank development extends 11 miles from this well towards the southeast to the Montana Power Co.'s No. 1 Simero, C N half, Section 5-33-5w, which was completed late in 1932 at 2,792 feet for an initial production of 102 bbls. The other producers were drilled in between these extremes and the only outstanding well was R. C. Tarrant's No. 1 Miller, C NE NE, Section 24-34n-6w, which came in as a flowing well, the first and only one in the field to date, making 450 bbls. initial from Darling sand at 2,785-2,810 feet. This well changed the complexion of the operation and revealed the possibilities for a much better field than at first expected. The limits of the

(Continued on Page 88)

Montana

Daily Average and Monthly Production First Six Months of 1933

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
BANNATYNE:							
Daily average	32	36	35	35	35	33	
Month	992	1,008	1,085	1,050	1,085	990	6,210
BORDER:							
Daily average	410	777	707	359	345	346	
Month	12,710	21,756	21,917	10,770	10,695	10,380	88,228
CAT CREEK:							
Daily average	749	650	748	716	703	712	
Month	22,219	18,200	23,188	21,480	21,793	21,360	129,240
CUT BANK:							
Daily average	161	285	194	467	452	327	
Month	4,991	7,980	6,014	14,010	14,012	24,810	71,817
DRY CREEK:							
Daily average	35	.....	84	251	345	671	
Month	1,085	.....	2,604	7,530	10,695	20,130	42,044
KEVIN-SUNBURST:							
Daily average	3,081	2,582	2,784	3,177	3,170	3,196	
Month	95,511	72,296	86,304	95,310	98,270	95,880	542,571
LAKE BASIN:							
Daily average	52	61	48	47	48	53	
Month	1,612	1,708	1,488	1,410	1,488	1,590	9,296
PONDERA:							
Daily average	1,386	997	968	925	903	940	
Month	42,966	27,916	30,008	27,750	27,993	28,200	184,833
Daily average	5,906	5,388	5,563	5,977	6,001	6,778	5,941
Total first six months 1933	182,086	150,864	172,608	179,310	186,031	203,340	1,075,239
Total first six months 1932	173,569	166,273	189,224	223,830	223,647	210,060	1,196,702
Total first six months 1931	243,153	249,900	258,385	249,840	254,138	246,450	1,501,846
Total first six months 1930	253,456	223,408	267,561	298,410	304,172	289,350	1,646,357
Total first six months 1929	241,299	257,656	293,973	298,830	350,238	347,610	1,809,606
Total first six months 1928	383,376	339,679	358,112	350,520	338,272	313,260	2,063,213
Total first six months 1927	426,498	399,868	452,000	417,000	434,155	462,330	2,592,451

Wyoming

Daily Average and Monthly Production First Six Months of 1933

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
BIG MUDDY:							
Daily average	1,899	1,848	1,835	1,759	1,833	1,817	
Month	58,869	51,744	58,435	52,770	56,823	54,510	333,151
DALLAS-DERBY:							
Daily average	551	491	238	520	541	536	
Month	17,081	13,748	7,068	15,600	16,771	16,080	86,348
DUTTON CREEK:							
Daily average	73	41	55	69	77	44	
Month	2,263	1,148	1,705	2,070	2,387	1,320	10,893
ELK BASIN:							
Daily average	569	533	598	578	535	562	
Month	17,639	14,924	18,538	17,340	16,585	16,860	101,886
FERRIS:							
Daily average	19	20	17	21	18	457	
Month	589	560	527	630	558	13,710	16,574
FRANNIE:							
Daily average	297	323	288	190	195	226	
Month	9,207	9,044	8,928	5,700	6,045	7,080	46,004
GRASS CREEK:							
Daily average	1,685	1,699	1,771	1,678	730	312	
Month	52,235	47,572	54,901	50,340	22,630	9,360	237,038
HAMILTON:							
Daily average	.....	.....	273	701	854	848	
Month	.....	.....	8,463	21,030	26,474	25,440	81,407
LA BARGE:							
Daily average	1,035	993	933	854	774	1,062	
Month	32,085	27,804	29,078	25,620	23,994	30,060	168,641
LANCE CREEK:							
Daily average	66	70	66	89	64	204	
Month	2,046	1,960	2,046	2,670	1,984	6,120	16,826
LOST SOLDIER:							
Daily average	1,786	1,379	1,364	1,454	1,932	1,873	
Month	55,366	38,612	42,284	43,620	59,892	56,190	295,964
POISON SPIDER:							
Daily average	61	53	206	115	328	190	
Month	1,891	1,484	6,386	3,450	10,478	5,700	29,389
OREGON BASIN:							
Daily average	295	219	101	134	515	235	
Month	9,145	6,132	3,131	4,020	15,965	7,050	45,443
OSAGE:							
Daily average	695	910	870	719	549	686	
Month	21,545	25,480	26,970	21,570	17,019	20,580	133,164
ROCK CREEK:							
Daily average	1,315	1,368	1,415	1,407	811	1,190	
Month	40,765	38,304	43,865	42,210	25,141	35,700	225,985
SALT CREEK:							
Daily average	20,604	19,937	20,299	18,863	19,499	19,116	
Month	638,724	558,236	632,349	565,890	610,469	573,480	3,579,368
BYRON-GARLAND:							
Daily average	128	120	199	232	96	178	
Month	3,968	3,360	6,169	6,960	2,976	5,340	28,773
PILOT BUTTE:							
Daily average	.....	.....	.....	32	32	.....	
Month	.....	.....	.....	960	992	.....	1,952
TEAPOT:							
Daily average	.....	25	19	17	16	21	
Month	.....	700	589	510	496	630	2,925
GREYBULL:							
Daily average	8	9	7	5	6	.....	
Month	248	252	217	150	186	.....	1,053
MIDWAY:							
Daily average	106	108	155	118	113	76	
Month	3,286	3,024	4,805	3,540	3,503	2,280	20,438
BADGER BASIN:							
Daily average	48	46	45	43	44	40	
Month	1,488	1,288	1,395	1,290	1,364	1,200	8,025
HUDSON:							
Daily average	355	364	351	364	388	372	
Month	10,850	10,192	10,881	10,920	12,028	11,160	66,031
Daily average	31,550	30,554	31,250	29,962	30,160	29,995	30,593
Total first six months 1933	979,290	855,563	968,750	898,860	934,960	899,856	5,537,278
Total first six months 1932	1,010,445	1,092,097	1,189,997	1,103,310	1,157,323	1,048,080	6,602,252
Total first six months 1931	1,358,234	1,254,568	1,264,366	1,329,390	1,329,453	1,278,720	7,814,930
Total first six months 1930	1,430,898	1,409,184	1,537,665	1,527,930	1,565,283	1,406,850	8,927,810
Total first six months 1929	1,512,087	1,442,326	1,592,104	1,490,430	1,581,306	1,520,160	9,145,923
Total first six months 1928	1,754,565	1,588,602	1,714,889	1,748,520	1,908,918	1,834,410	10,561,844
Total first six months 1927	1,870,727	1,678,180	1,840,439	1,828,070	1,896,361	1,852,920	10,976,637

Shreveport District Operators Show Confidence in the Big Territory By Their Preparations

By D. H. BANCROFT
Staff Correspondent, Louisiana-Arkansas

For a period of depression, and more especially for a period during which the oil industry has been going through a particularly critical stage, North Louisiana-Arkansas territory has shown up remarkably well from the standpoint of drilling activities. While there were fewer completions and fewer operations on the books at the end of the period than at the end of 1932, there were more completions and only 10 less operations under way than at the end of the first half of last year.

On the other hand, winter months are usually the most active in this territory and the difference between the last half of 1932 and the first half of 1933 is seasonal.

Natural depletion of the active fields accounts for a difference of initial production of new completions, still there were 21 fewer dry holes between the last half of last year and the first half of this, though there were 42 more failures in the first half of 1933 than there were during the corresponding period of last year.

Since the first of the current year operations under way carried on field reports as locations, rigs and drilling wells have shown a small but continued increase from month to month and returning better conditions will probably continue at the same or at an accellerated rate with increasing confidence in the general outlook on conditions as a whole. These figures and this outlook apply to Louisiana north of Red River, south Arkansas, Mississippi wildcat and proven territory and even the border counties of East Texas which have been quiescent for the last year or more.

Active Regions in 1933

While there was continued wildcatting throughout the territory, North Louisiana activities were centered largely in the Zwolle Field of Sabine Parish, and its extensions; the development of the new Converse Field, 15 miles north of Zwolle, and the Blanchard (Caddo Parish) gas field, the Rodessa Trinity gas district of the same parish, and to a lesser extent the Sugar Creek Trinity gas field of Claiborne Parish. The Monroe gas field was, until the last month or six weeks of the period, practically inactive as was the Richland Parish gas field.

In Mississippi, the Jackson gas field was active only to the extent of drilling necessary offsets or wells to protect leases. The field developed 150 bbls. of oil, initial production, of doubtful commercial value and longevity, though two groups are interested in building topping plants at Jackson to handle local and East Texas crude. During the last half of last year 500 bbls. initial was developed. It is a heavy crude of asphalt base and accompanied by much salt water.

Miller County's (Ark.) first producer was completed in 1930 and development continued slowly until the fall of 1932 when the second commercial well was completed. More or less of a local boom developed resulting in completion to date of half a dozen wells, closely grouped, with wildcat failures on all four sides. From 200 to 400 bbls. per day has been shipped out in tank cars, as there are no pipe line facilities, for the last two or three months.

The Converse Area

Converse district of northern Sabine Parish, Louisiana, was opened during the latter part of last year and reached its greatest development at the end of the first half of 1933 with six completions, five producers with a total run ranging from 500 to 600 bbls, one gas well and 10 operations under way. As this is written there are two or three or more prospects showing for successful completions. Pipe line connections were completed during the last two weeks of the period but the pool has not yet been given separate rating as the oil is approximately the same grade as Zwolle crude and the pipe line is an extension of a line serving Zwolle. Converse is very similar to Zwolle in that it is a chalk rock field, though there is considerable difference of opinion among geologists and paleontologists on this point. It has not yet been agreed upon as to what formation is producing.

During the closing weeks of 1932 and the first two or three months of 1933 the acid treatment of chalk rock wells was applied generally in Zwolle and to a limited extent in the same formation in Caddo Parish pools and also, but to a still more limited extent, in the Monroe gas area, where a sand condition prevails. At first the results far exceeded expectations, particularly in Zwolle, but after a few weeks the wells settled to approximately, or a little more, than their production before being given the treatment. However, the treatment is still being used with uniformly good results.

With gas production from around 5,500-5,700 feet in northwestern Caddo Parish and at around 4,300 feet in Claiborne Parish, and showings of oil in older deep tests in Caddo, DeSoto, Bossier and Webster proven and wildcat areas, there is a growing tendency toward deeper drilling throughout the territory and in North Louisiana in particular. The deepest hole yet drilled in the territory, in the Smackover Pool of Arkansas, was abandoned below 7,000 feet with the bottom 1,000 feet or more in rock salt. Geologically it was a shallower test than one drilled in Cotton Valley Pool of Webster Parish three years ago and another still drilling on the south flank of the Bellevue Dome of Bossier Parish, Louisiana. From the geological point of view this well, last reported at 5,030 feet, is the deepest ever

North Louisiana

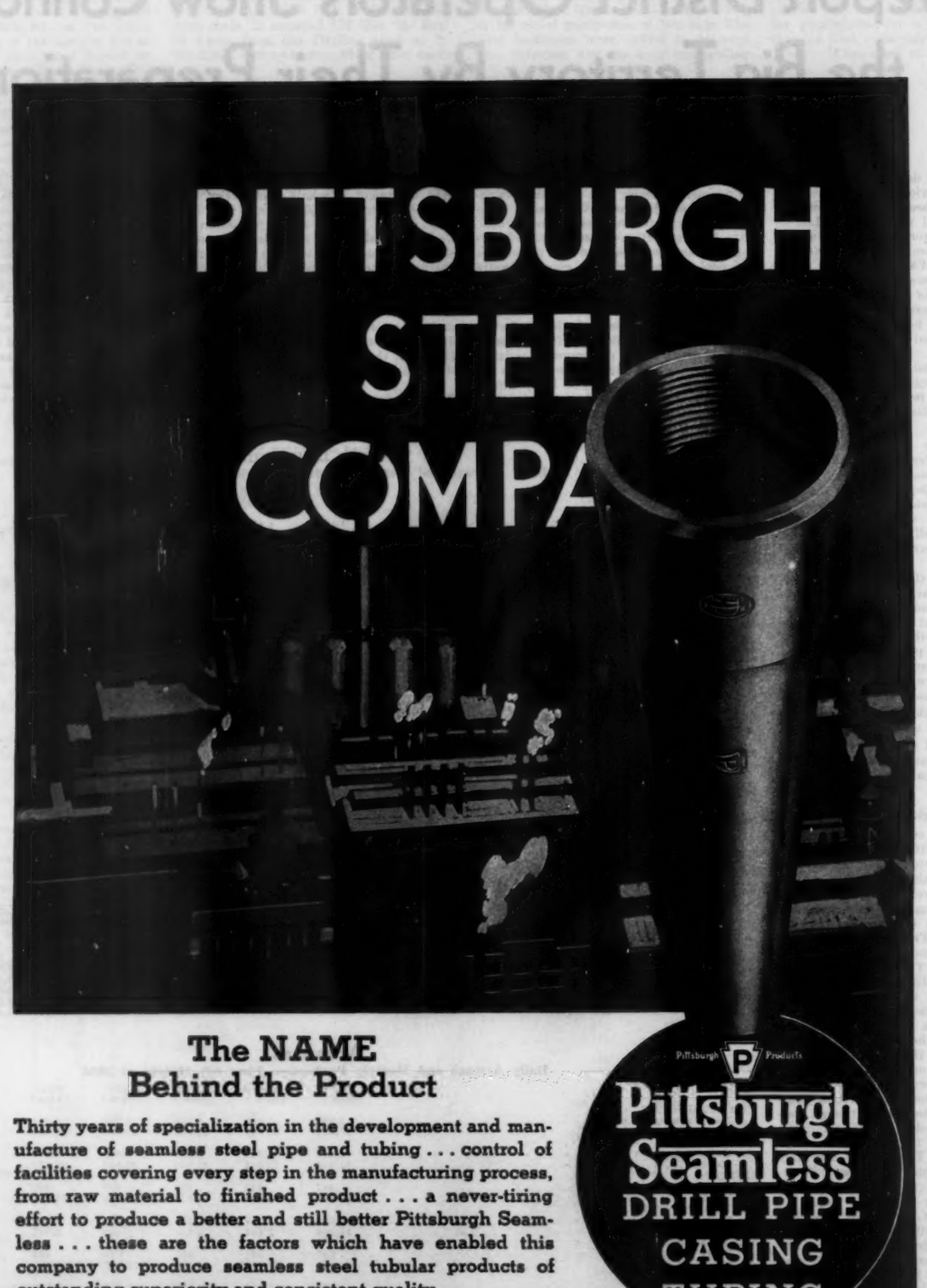
Daily Average and Monthly Production First Six Months of 1933

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
CADDO (light):							
Daily average	4,887	4,965	5,114	5,024	4,977	4,742	
Month	151,497	139,020	158,534	150,720	154,287	142,260	896,318
CADDO (heavy):							
Daily average	1,775	1,780	1,742	1,653	1,563	1,573	
Month	55,025	49,840	54,002	49,590	48,453	47,190	304,100
COTTON VALLEY:							
Daily average	665	628	629	625	566	555	
Month	20,615	17,595	19,490	18,750	17,546	16,650	110,868
DE SOTO-RED RIVER:							
Daily average	1,764	1,727	1,775	1,742	1,655	1,636	
Month	54,684	48,356	55,025	52,260	51,305	49,080	310,710
ELM GROVE:							
Daily average	360	349	348	549	327	351	
Month	11,160	9,772	10,788	16,470	10,137	10,530	68,857
HAYNESVILLE:							
Daily average	3,866	3,932	3,927	3,957	3,932	3,926	
Month	119,846	109,816	121,737	118,710	122,078	117,780	709,967
HOLLY:							
Daily average	226	236	217	215	210	208	
Month	7,006	6,328	6,727	6,450	6,510	6,090	39,111
HOMER:							
Daily average	2,754	2,731	2,724	2,703	2,692	2,694	
Month	85,374	76,468	84,444	81,090	83,452	80,820	491,648
PLEASANT HILL:							
Daily average	284	255	293	284	253	249	
Month	8,928	7,140	9,082	8,520	7,843	7,470	48,984
SAREPTA-CARTERSVILLE:							
Daily average	732	676	704	765	760	789	
Month	22,382	18,928	21,824	22,950	23,560	23,670	133,314
URANIA:							
Daily average	3,309	3,302	2,955	1,470	1,453	1,875	
Month	102,579	92,456	82,305	44,100	45,043	56,250	422,733
ZWOLLE:							
Daily average	9,027	9,556	11,524	11,135	8,260	6,716	
Month	279,837	267,568	357,244	334,050	259,160	201,480	1,699,339
Daily average	29,643	30,125	31,652	30,122	26,754	25,309	28,928
Total first six months 1933	918,933	843,500	981,312	903,660	829,374	759,270	5,235,949
Total first six months 1932	897,295	824,412	866,636	869,580	915,302	895,440	5,269,165
Total first six months 1931	1,274,255	1,229,788	1,347,130	1,170,330	1,219,106	1,086,780	7,327,389
Total first six months 1930	1,168,554	1,136,396	1,271,465	1,256,500	1,226,761	1,200,630	7,259,246
Total first six months 1929	1,114,171	990,024	1,169,986	1,069,200	1,097,131	1,068,960	6,449,462
Total first six months 1928	1,369,146	1,313,535	1,369,115	1,411,290	1,382,034	1,272,940	8,118,780
Total first six months 1927	1,589,122	1,474,004	1,589,711	1,611,250	1,469,710	1,435,020	9,068,817

Arkansas

Daily Average and Monthly Production First Six Months of 1933

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
CHAMPAGNOLLE:							
Daily average	1,527	1,491	1,445	1,362	1,354	1,370	
Month	47,337	41,748	44,795	40,890	41,974	41,100	257,844
EL DORADO:							
Daily average	2,644	2,648	2,649	2,698	2,609	2,605	
Month	81,964	74,144	81,940	80,940	80,879	78,150	477,917
LISBON:							
Daily average	447	443	412	405	401	396	
Month	13,857	12,404	12,772	12,150	12,431	11,880	75,494
MILLER COUNTY:							
Daily average	360	88	135	61	65	62	
Month	11,160	2,464	4,185	1,830	2,015	1,860	23,514
NEVADA COUNTY:							
Daily average	897	980	852	604	454	505	
Month	27,807	27,440	26,412	18,120	14,074	15,150	129,003
SMACKOVER (light):							
Daily average	2,671	2,626	2,593	2,566	2,563	2,612	
Month	82,801	73,528	80,383	76,980	79,422	78,360	471,474
SMACKOVER (heavy):							
Daily average	22,698	22,412	21,698	22,085	21,929	21,852	
Month	703,638	627,536	670,776	662,550	679,799	655,590	3,999,891
STEPHENS:							
Daily average	239	151	141	140	148	207	
Month	7,409	4,228	4,371	4,200	4,585	6,210	31,004
URBANA:							
Daily average	564	597	586	382	435	449	
Month	17,484	16,716	18,166	11,460	13,485	13,470	90,781
Daily average	33,047	31,436	30,442	30,304	29,957	30,059	30,701
Total first six months 1933	992,457	880,208	943,702	909,130	928,667	901,770	5,556,934
Total first six months 1932	1,101,616	1,008,562	1,062,897	1,048,620	1,064,602	1,022,970	6,309,267
Total first six months 1931	1,574,955	1,402,492	1,469,345	1,412,220	1,446,274	1,344,450	8,649,636
Total first six months 1930	1,817,685	1,608,376	1,817,871	1,724,460	1,659,895	1,704,060	10,332,347
Total first six months 1929	2,453,536	2,154,194	2,302,734	2,188,680	2,230,158	2,112,270	13,432,562
Total first six months 1928	2,791,922	2,571,575	2,687,948	2,472,600	2,843,847	3,075,911	16,443,803
Total first six months 1927	4,076,469	3,574,356	3,853,920	3,378,240	3,492,669	3,365,760	21,742,314



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drilled in this territory though several others have gone 6,000 feet, and more, so far as footage is concerned.

Another wildcat, in Claiborne Parish, had reached a total depth of 6,608 feet—next to the Arkansas well referred to the deepest yet drilled as to footage, and was scheduled to go to 7,000 feet before abandonment. So far it has developed only sufficient gas to force mud out of the drill stem on drill stem tests at 4,390, 5,144-80 and 5,747 feet, with more or less salt water accompanying. The same interests drilled to below 4,000 feet 3 miles east of the Haynesville Pool of Claiborne Parish and got nothing, and another group, drilling to 4,707 feet on a deep test in the southeast corner of Haynesville proven territory, abandoned the hole on a salt water test after previous tests at 4,300, 4,414 and 4,606 feet were salty or dry with a slight show of gas.

Scattered Deep Tests

What is, for that part of the country, a deep test was abandoned in the Morehouse Parish part of the Monroe gas field at 3,523 feet, and in Zwolle a semiwildcat drilled to 4,000 feet and two or three others in proven territory carried to intermediate depths between the 2,600-foot producing horizon and this depth, also were dry. On the other hand, a Converse well drilled to 3,400 feet was a commercial gasser, and as this is written a well drilled to 4,600 feet in the southwest corner of DeSoto Parish is scheduled to drill plug after setting 6⅝-inch casing as second string at 4,454 feet. It has had three shows; gas at 2,080-89 feet in a tight sand, 4,141-98 feet in the same character of sand, 4,240-46 feet in oolithic lime and again in 20 feet of soft sand in which they recovered part of a core showing for a heavily saturated gas. Still another deep test, a wildcat about halfway between Zwolle and Converse production, is shut down at 7,000 feet after passing up gas shows at 3,300 feet and oil and water at 3,600 feet, with a later test of hot salt water at around 5,900 feet which was successfully shut off.

Many Leases Blocked

Blocking has continued throughout the territory to an extent remarkable in the face of prevailing conditions. While most of the blocks assembled have been small, 5,000 acres or less, with contracts calling for 2,500 to 4,500-foot tests, there have been several of much larger proportions, particularly along the Conroe-Jackson trend across the central portion of the State just south of Alexandria, the play taking a northeast trend from southern Vernon and northern Beauregard Parishes east to Avoyelles and Concordia Parishes and thence into Mississippi at Wilkinson, Adams and Amite Counties into the Jackson-Rankin County gas field and thence southeast into the south central and southeastern counties of the State. Two or three or more blocks running into the hundreds of thousands of acres have been leased in southern Mississippi and one or two in southwestern Louisiana in the line of the trend, with any number of smaller blocks ranging from 5,000 acres up sandwiched in between. Most of these, big and little, are on straight commercial leases with no drilling obligations and small bonus and renewals. It seems to be a case of looking to the future rather than with any definite plans for immediate development though there have been half a dozen wells begun and finished.

The latest of these were George Greer and others' No. 1 Louisiana Central Lumber Co. in Section 2-9-6, Catahoula Parish, in the east central part of the State, which blew out from around 2,744 feet with an estimated 15,000,000 feet of gas and 5,000 bbls. of salt water from the Wilcox, with drill stem in the hole. Twelve hours later it bridged and was abandoned and No. 1-B on the same lease and section is drilling after a dry test at 2,753 feet. This vicinity is rather favorably looked upon as the next prospective gas field in North Louisiana as during the last five years, or so, other wells have developed similar volumes of gas only to be lost in the end, one of them catching fire.

In spite of the fact that North Louisiana has been thoroughly punctured with shallow tests during the last 25 years the geologists claim that there are plenty of unexplored "noses" of proven structures warranting exploration, and with continued improvement in conditions in general and the oil industry in particular there is apt to be an increase in field work during the latter half of the year. The number of operations carried on field reports has been growing from month to month and there is no reason why activity should not continue on the increase.

In addition to the shallow drilling that will continue in Converse and Zwolle there will be the development of the numerous blocks that have been built throughout the territory and back of that the deep drilling, in the results of which faith seems to be getting stronger and stronger. Deep drilling will be relative; what might be a deep test for one locality would not necessarily be a deep hole in another. However, the idea that it will take 6,000 to 8,000-foot holes to develop new flush production anywhere in the district is growing.

The Conroe-Jackson trend probably will come in for quite a play. South and central Mississippi appear to be holding considerable interest and will likely continue to be drilled.

Arkansas, except for Miller County, has been practically inactive all year but is showing signs of reviving. The border counties of East Texas are in the same situation but not much activity is looked for there.

NORTH LOUISIANA

Completions by Parishes First Six Months of 1933

	Comp.	Prod.	Dry	*Gas
Allen	1	0	1	0
Beauregard	3	0	3	0
Blenville	3	0	3	0
Bossier	3	1	2	0
Caddo	17	33	7	3
Caldwell	0	0	0	0
Catahoula	1	0	1	0
Claiborne	3	0	2	1
Concordia	1	0	1	0
DeSoto	6	0	6	0
Grant	1	0	1	0
Jackson	0	0	0	0
Lincoln	0	0	0	0
Morehouse	1	0	1	0
Natchitoches	3	0	3	0
Ouachita	4	0	1	3
Rapides	0	0	1	0
Red River	3	40	1	0
Richland	0	0	0	0
Sabine	90	9,410	50	0
Union	3	0	3	0
Vernon	2	0	2	0
Webster	3	0	3	0
West Carroll	0	0	0	0
Winn	1	0	1	0
Total	149	9,484	93	12

*Gas production: Caddo, 79,702,000 feet; Claiborne, 40,000,000 feet; Ouachita, 21,150,000 feet; Sabine, 5,000,000 feet; total, 145,852,000 feet.

Completions by Months

	Comp.	Prod.	Dry	Gas
January	21	2,220	10	3
February	18	3,990	11	1
March	28	543	20	1
April	20	1,330	8	1
May	38	1,311	27	2
June	24	90	17	4
Total	149	9,484	93	12
Same period 1932	122	21,716	58	19
Difference	27	12,232	35	7

ARKANSAS

Completions by Counties First Six Months of 1933

	Comp.	Prod.	Dry	Gas
Cleburn	1	0	1	0
Cleveland	0	0	0	0
Columbia	0	0	0	0
Desha	0	0	0	0
Hempstead	0	0	0	0
Jefferson	0	0	0	0
Lafayette	2	0	2	0
Lincoln	1	0	1	0
Little River	1	0	1	0
Miller	14	395	9	0
St. Francis	1	0	1	0
Union	6	0	5	0
Woodruff	1	0	1	0
Yell	0	0	0	0
Total	29	395	24	0

Completions by Months

	Comp.	Prod.	Dry	Gas
January	7	200	6	0
February	4	0	4	0
March	1	45	0	0
April	3	0	3	0
May	7	150	2	0
June	6	0	9	0
Total	28	395	24	0
Same period 1932	18	335	16	0
Difference	10	60	8	0

EAST TEXAS GAS AREA

Completions by Counties First Six Months of 1933

	Comp.	Prod.	Dry	Gas
Bowie	2	0	2	0
Cass	2	0	2	0
Harrison	2	0	2	0
Marion	1	0	1	0
Panola	1	0	1	0
Red River	0	0	0	0
Shelby	4	0	4	0
Total	12	0	12	0

Completions by Months

	Comp.	Prod.	Dry	Gas
January	0	0	0	0
February	7	0	7	0
March	0	0	0	0
April	1	0	1	0
May	4	0	4	0
June	0	0	0	0
Total	12	0	12	0
Same period 1932	24	0	18	6
Difference	12	0	6	6

MISSISSIPPI

Completions by Counties First Six Months of 1933

	Comp.	Prod.	Dry	*Gas
Amite	0	0	0	0
Bolivar	1	0	1	0
Clarke	0	0	0	0
Covington	1	0	1	0
George	1	0	1	0
Hinds	4	0	1	3
Jackson	1	0	1	0
Jasper	1	0	1	0
Lamar	1	0	1	0
Monroe	1	0	1	0
Newton	0	0	0	0
Rankin	4	150	0	3
Scott	0	0	0	0
Sunflower	4	0	4	0
Warren	0	0	0	0
Webster	0	0	0	0
Wilkinson	0	0	0	0
Total	19	150	12	6

*Gas production: Hinds, 66,000,000 feet; Rankin, 132,295,000 feet; total, 198,295,000

Completions by Months

	Comp.	Prod.	Dry	Gas
January	1	0	0	1
February	6	150	4	2
March	1	0	1	0
April	3	0	3	0
May	3	0	1	2
June	5	0	4	1
Total	19	150	12	6
Same period 1932	35	0	8	27
Difference	16	150	4	21

ALABAMA

Completions by Counties First Six Months of 1933

	Comp.	Prod.	Dry	Gas
Baldwin	0	0	0	0
Cullman	0	0	0	0
Esambia	0	0	0	0
Lamar	0	0	0	0
Washington	1	0	1	0
Total	1	0	1	0

Completions by Months

	Comp.	Prod.	Dry	Gas
May	1	0	1	0
Total	1	0	1	0
Same period 1932	0	0	0	0
Difference	1	0	1	0

One of the Many Rough Spots on the Iraq Pipe Line

Trackson Crawler Tractors are used to a large extent in the difficult work of preparing the right-of-way, ditching, stringing pipe and laying the pipe for the Iraq Pipe Line Co.'s 1200-mile line

North Central, West Texas and Panhandle

(Continued from Page 77)

of 5,192 feet, plugging back to 4,140 feet before shooting. This well opened up another area producing from the deeper

PANHANDLE DISTRICT

The Panhandle district had its price and proration troubles during the year. Many of the operators in the district asked for permits to erect natural gasoline plants to process their gas as the larger purchasing companies refused to take equitably from all gas producing leases in the field. Many petitions were sent the railroad commission for such permits, many of which have been granted and plants proposed. Several such plants are expected within the next few months.

All activities in the district were held to a minimum during the past six months. Only 87 producers were completed and 9 tests abandoned, the latter being wildcats, which is an exceptionally small number for such a vast area. Fourteen gas wells were completed in the six months.

Distance from markets has been a deciding influence against crude produced in the Panhandle, companies desirous of taking oil from fields nearer the Gulf ports, such as East Texas, which was a definite factor against conditions becoming better in the Panhandle the past six months. The next six months and year is not expected to see much change in this district, although gas will continue to be a much sought after commodity, regardless of the amount being produced and wasted in the district at the present time. The commission should use more stringent measures in enforcing the conservation of gas in this district, and may call on the Federal Government under the present Industrial Recovery Act to put an end to gas wastage this year. Once this valuable commodity is gone it can never be replaced.

The Skelly Oil Co. erected an eight-car loading rack at LeFors in Gray County to give its Saunders lease an outlet this year. The company is shipping out crude to the Utah Refining Co.'s plant at Salt Lake City, giving the district another small outlet.

The Darby Petroleum Co. and Merry Brothers and Perini drilled a test in Cottle County this year but it was dry. It went to 4,740 feet before plugging. Location was in Section 40, Block B, John H. Stevens Survey.

W. W. Woolsey and A. D. Devore are now drilling a 4,500-foot test in Section 85, Block 2, B.&M. Survey, 4 miles southeast of Amarillo in Randall County. The test is equipped to go to 6,500 feet.

New Wells Drilled in West Canada Could Not Offset the Decline in Crude Oil Production

By VICTOR LAURISTON
Staff Correspondent, Canadian Fields

In the first six months of 1933 the Turner Valley Field in southern Alberta continued to be the major factor in Canadian crude production. The continued decline in this field was reflected in the totals for the entire Dominion, the drop in Alberta production offsetting slight gains in both Ontario and New Brunswick.

The official production figures for all Canadian fields are available only for the first four months of the year. The comparative figures in barrels are as follows:

	1932 (bbls.)	1933 (bbls.)
January	96,912	82,778
February	90,841	73,087
March	97,434	87,218
April	95,585	84,974
Total	380,822	328,057

Comparative figures of production for the individual provinces for the same four months are given below:

	Jan.-June, 1932	Jan.-June, 1933
New Brunswick	1,762	3,642
Ontario	40,268	41,963
Alberta	338,792	282,453
Total	380,822	328,057

The detailed monthly figures for the various provinces for the four months of 1933 are given as follows:

	Jan. (bbls.)	Feb. (bbls.)	Mar. (bbls.)	Apr. (bbls.)
Alberta	70,356	62,227	75,225	74,645
New Brunswick	774	788	1,245	835
Ontario	11,648	10,072	10,748	9,494

The Alberta production in the same period is detailed as follows:

	Jan. (bbls.)	Feb. (bbls.)	Mar. (bbls.)	Apr. (bbls.)
Turner Valley naphtha	65,585	57,202	69,306	69,447
Turner Valley light crude	1,183	1,739	2,153	2,012
Red Coulee-Border light crude	2,938	2,760	3,095	2,942
Wainwright heavy crude	650	526	666	244

Natural gas production for all Canadian fields for the same period also shows a considerable decline. This is due less to declining gas reserves than to the decreased consumption due to economic conditions. The comparative figures in thousands of cubic feet are as follows:

	1932 M.C.F.	1933 M.C.F.
January	3,220,087	2,945,452
February	3,043,967	2,826,995
March	3,009,764	2,497,762
April	2,353,619	2,222,556
Total	11,627,437	10,492,765

Turner Valley Situation

Except for a small production of light crude oil from the upper sands, the Turner Valley output consists of crude naphtha extracted from wet gas flows by means of separators. While some of the residual gas was sold to the Canadian Western Natural Gas Co. which in the last few years has drawn practically its entire gas supply from that field, the amount of residual gas was far in excess of the possible domestic and industrial consumption in Calgary and other cities served from the field. As a result, the surplus gas was piped to a safe distance and burned wide open.

The amount of naphtha produced, and consequently the immediate returns to the operators, depended on the unrestricted flow of gas. On the other hand, continued wastage, estimated at the peak in excess of 300,000,000 feet a day, presented a conservation problem.

The Alberta government adopted a policy of restricting the wells to 40 per cent of open flow with the proviso that the flow should be limited as nearly as practicable to 240,000,000 feet a day. Metering of all wells was required. At the same time the prohibition against new drilling to the crude naphtha horizon was lifted. This policy went into force on April 15. Pipe line runs for May show a decided upturn, though this may be in part due to other factors than the modification of the conservation policy.

Comparative figures of Turner Valley refinery deliveries are as follows:

	1932 (bbls.)	1933 (bbls.)
January	68,893	42,989
February	67,785	38,857
March	71,532	45,960
April	66,641	45,763
May	65,709	64,691
June	64,324	.....

With the May figures close to those of the same month last year, indications are that the field is coming back to some extent. Refinery deliveries, however, do not represent the entire Turner Valley production, as considerable crude naphtha is, in accordance with Alberta legislation, retailed direct at the wells, or through various marketing agencies.

While modification of the conservation measures contributed to some extent to bring back production, another factor in the same direction is the completion by the Royalite Oil Co. of a large gasoline absorption plant. This plant handles both residual gas, after the major part of the naphtha is extracted by the separators, and also gas delivered direct from some of the older wells. The plant started operations about May 1, but did not get into full operation till early in June. It is expected to deliver an output of between 500 and 600 bbls. a day, which largely represents naphtha previously burned with the residual gas. Independent operators are discussing a second absorption plant which, it is planned, will convert the waste gas into carbon black.

Turner Valley Drilling

The outstanding feature of Turner Valley drilling in the last six months has been the steadily increasing activity in the far south end of the field.

This activity really started late in 1932, but it was stimulated by the completion in May of Mar-Jon-Freehold's No. 1, LSD 9, Section 28-18-2w5. This well reported a wet gas flow from the lime around 16,000,000 feet a day with initial crude naphtha recovery of 400 bbls.

At the end of June there were four tests drilling and two more starting in Section 28. A seventh test by Sterling Pacific Royalties, Ltd., was getting under way in the adjacent Section 33. Further new drilling in this area seems probable this season, and there has been a keen demand for acreage.

At the same time, two tests, Union Drilling Co.'s No. 1, LSD 8, Section 21-18-2w5, and Hoffar-Lundy Syndicate's No. 1, LSD 13, Section 22-18-2w5, are testing the possibility of an extension of the producing area approximately 1 mile south of Mar-Jon-Freehold's No. 1 producer. The Hoffar-Lundy test is down approximately 2,400 feet and should get the lime this season.

In the older portions of the field, Model Oils' No. 2, LSD 16, Section 22-20-3w5, has been the center of interest. This test, drilled a half mile north of Model's No. 1, at last reports was drilling more than 400 feet in the lime with wet gas flow of 5,500,000 feet and estimated naphtha recovery about 50 bbls. It is being deepened for larger production. United Oils' No. 2, LSD 2, Section 24-20-3w5, after failing to get production in the lime, tried, without success, to recover a light crude production encountered in the overlying Dalhousie sands.

In Central Turner Valley, New McDougall-Segur Oil Co.'s No. 6, LSD 11, Section 12-20-3w5, is continuing the development of the light crude horizon in the McDougall-Segur sands, which gives promise of fair returns for shallower and less expensive drilling than is involved in the deep lime tests. McLeod Oil Co.'s No. 4, LSD 16, Section 1-20-3w5, is preparing to go on down with its deep test of the lower formations, standing since last winter at 7,755 feet depth, a record for Canada. Bow Oils' No. 1 Illinois-Alberta, LSD 14, Section 12-20-3w5, is endeavoring to clean out and restore deep lime production.

The Mercury section of South Turner Valley has two tests in progress. Associated Royalties' No. 1, LSD, Section 5-19-2w5, has casing trouble at 3,340 feet, while Miracle Oils' No. 2, LSD 16, same section, is going down from 6,150 feet to test the lime.

Foothills tests which may do further work include one on the Monarch structure, two in the Moose Mountain area and one on the Moose Dome structure.

Great Plains Area

Two widely separated tests in the Great Plains area have attracted considerable attention. Athadome Oils' No. 2, LSD 3, Section 15-66-23w4, in the Athabaska district near the northern limits of Alberta, got a 50-foot sand at 1,650 feet yielding around 20 bbls. a day of 13 gravity crude. The company is planning a series of wells whose output, treated in a small topping plant in the field, is apt to command good prices in this isolated section of the Canadian north.

What appears to be an important strike was reported late in June from a point in Alberta just north of the Montana boundary, where a joint test by Nordon Corp. and C. A. Roney on the Twin River structure in Section 2-2-20w4 encountered a heavy gas flow, estimated at 20,000,000 feet a day. Early reports indicated that the test, on deepening a little, got some crude oil. If the well holds up to earlier indications it may prove an important new field between Lethbridge and the border.

The producing horizon is just below the Ellis-Madison contact. Three wells in this general area last year encountered oil shows in this horizon, though none of them were commercial.

In the Keho Lake area, Hudson's Bay Oil & Gas Co.'s No. 1 Keho, LSD 2, Section 17-11-22w4, was definitely finished in May. An oil show in the top of the Madison failed to develop commercial production but two stray sands in the overlying Benton formation yield a reported pumping production around 6 bbls. a day, which is included in government figures with the Red Coulee returns. In the Milk River area, Commonwealth Petroleum's No. 1 deep test, LSD 8, Section 9-3-15w4, was definitely completed this spring and finished a dry hole at 5,310 feet, though a number of noncommercial shows were encountered.

East of Edmonton, Frontier Development's No. 1, LSD 2, Section 1-55-13w4, on the Two Hills structure finished in salt water at 2,000 feet, after encountering a noncommercial oil sand at 1,887 feet.

Drilling in Ontario

In the Haldimand-Norfolk section of the Ningara Peninsula, considerable shallow drilling for gas has been carried on by Toronto and local companies, a good part of the production being contracted to the Southern Ontario Gas Co. and allied organizations. White Oil Co. of Sarnia has developed a number of gassers near Caledonia, the Emerald Syndicate of Toronto has been active in Haldimand, and while the individual gassers are sometimes small, the general results are satisfactory to the operators.

Tests in Tilbury Field

Much of the drilling in the older fields of Kent County has been on similar lines. Glenwood Syndicate completed two small gassers in the old Tilbury Field, and has since organized as Salina Oil & Gas Co. which is starting a third test. Ralph Dawson has finished another small gasser in the Tilbury Field. Southern Ontario Gas Co. takes production of all these wells.

The same company will take production from the Olga Field in Raleigh Township, where Olga Oil & Gas Co.'s No. 6 is being started. In a western extension of this area last fall a test by F. H. Stover & Son on the Flook farm encountered oil, estimated 25 bbls. a day, but a later well drilled by Producers Gas Corp. on the Cecil Chinnick farm finished dry. The gas area south and east, however, gives promise of a fair production.

In the eastern section of Kent County, Vacuum Gas & Oil Co. of Toronto drilled two wildcat tests in Orford Township near Clearville. The first got a small gas show in the Salina but a shot failed to develop commercial production and the well was abandoned. The second test finished dry.

In the eastern section of the Dover Field, a deep test of the Trenton limestone by Raleigh Development Syndicate has got a couple of small gas pays but at the end of June was still unfinished.

In Essex County, a wildcat test is being drilled by Bon Jasperson in Lot 14, Concession 2, Maidstone Township.

Mosa Township, Middlesex County, inactive for some years, got a play this spring when George Willets finished a shallow producer, estimated 24 bbls. a day flush production, on a lease north of Glencoe. A second test is being started.

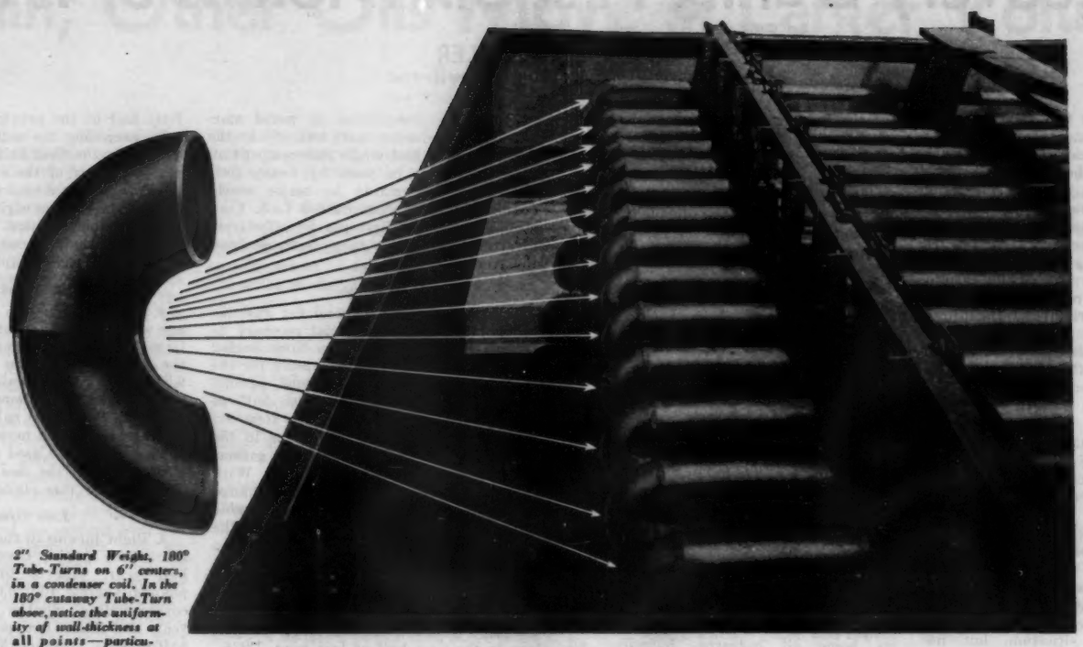
In the old Petrolia Field, some new activities are under way. Earlier in the year Messrs. Welch and Ward undertook chemical treatment of some of the old producing wells, utilizing the Dowell process. So far, results have been largely negative, due apparently to the condition of the well equipment; but it is understood further work will be carried on. Another venture in this area is the drilling by Fred Edward of a 10-inch hole to the lime, testing the theory that better production can be secured in this way than from the small holes typical of the shallow field.

Further north, the British Petroleum Co. is reported drilling a deep test near Aberarder.

Quebec Operations

In Quebec province, a deep test drilled jointly by Canadian Seaboard Oil & Gas, Ltd., and Alberta Gas & Fuel Co., Ltd., at Ste. Angele de Laval in Nicolet County is reported down more than 5,110 feet with some small gas shows.

On the north side of the St. Lawrence some additional drift gas is reported struck in a fifth shallow well drilled by Lanorale Oil & Gas Syndicate in the Berthier-L'Assomption area, and plans to pipe gas to Joliette are under consideration.



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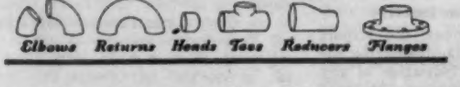


Elbows Returns Heads Tees Reducers Flanges

Refined Products Exports From New York Show Recovery During First Six Months of 1933

By A. E. MOCKLER
New York Bureau, The Oil and Gas Journal

Reflecting heavier foreign demand, attributable in some measure to the abandonment of the gold standard by the United States and the consequent cheapening of the dollar in world exchange markets, refined product exports from New York showed some recovery during the first half of the year, particularly sharp increases being shown by lubricating oil and paraffin wax, while gasoline exports were also larger. A comparative table of exports of principal refined products for the first six months of the year, with comparable totals for the corresponding months of 1932, follows:

	First six months 1933 (gals.)	1932 (gals.)
Gasoline	3,896,000	1,804,000
Naphtha	4,584,000	4,777,000
Kerosene	1,188,000	1,372,000
Fuel and gas oil	4,922,000	2,948,000
Lubricating oil	45,313,000	31,121,000
Paraffin wax (lbs.)	55,162,000	38,055,000

The export outlook, in so far as East Coast refiners are concerned, was appreciably brightened as the second half of the year got under way. Not only were foreign buyers coming back into the market in greater numbers, stimulated by the favorable exchange situation, but improved economic conditions in several South American countries, formerly large buyers of refined products from the Atlantic Coast, had improved to such an extent that several eastern refiners, who had virtually withdrawn from these markets during the previous year, due to their inability to remit funds from these countries to cover the cost of shipments made, returned to previous marketing practices and started large volume shipments of products to these countries.

The South American situation during the first half of the year witnessed one unfavorable development, however, in the intensification of competition by Caribbean refiners for this business. One major exporter, who formerly shipped large quantities of cased products out of New York and other Atlantic ports for the South American market, this year undertook a program of refinery expansion at Trinidad, with the idea of supplanting American kerosene and gasoline shipments by deliveries out of Trinidad.

Such a development, however, had been anticipated with the enactment of the oil tariff law last year, which has naturally diverted considerable South American business in refined products to refineries closer to the actual consuming countries.

Another unfavorable development of the year has been the continued expansion in domestic refining operations on the part of many countries formerly drawing a large part of their requirements from refineries in the United States. This tendency will continue, it is believed in well informed export circles, and American refiners must face the fact that they have definitely lost a large part of their previous potential world market.

Export Association Inactive

Contrary to expectations, the Export Association continued inactive during the year thus far, with no indication of any pending revival in operations by that group, which is representative of the leading exporting companies in the American oil industry.

It is still regarded as possible, however, that this association may be revived to serve as the medium for American cooperation with the Rumanian and international groups as soon as readjustment of the domestic situation, under the terms of the industrial recovery act, has made sufficient progress to warrant such a step.

French Refining

There has been a marked increase in French refinery output during the first six months of 1933, several new plants going into operation, and while that country has continued as a buyer of crude in the American market, it has sharply curtailed its foreign purchases of refined products. In fact, France is now making rapid progress as an exporter of refined products, although the bulk of its foreign trade thus far is with its own colonies and dominions.

By the latter part of 1934 it is anticipated that France will be drawing sufficient quantities of crude for its import requirements from Iraq, and this will not only shut off further sales of American crude to that country, but will likewise militate as well against extensive refined product buying in this country by France.

To add to the complexities of the French oil situation, the government of that nation is now aggresively pushing its plans for complete monopolization of its home oil industry, including all branches of the trade.

England

Great Britain continues a leading purchaser of American refined petroleum products, particularly of lubricating oil, and considerable shipments have gone to British ports from here during the half year.

The outlook for continued British buying of American products is less favorable, however. British oil companies operating in South America, Dutch East Indies, Persia and elsewhere are getting a growing share of the home trade, while England, as is the case with France, will be in position to draw large quantities of Iraq crude late next year. Completion of the Iraq pipe line, it is expected, will be signalized by an increase in refining operations in the United Kingdom.

Major American companies, which have accounted for the bulk of American exports of refined products to England, for distribution by their marketing subsidiaries in that country, are, in the main, interested also in the Iraq project.

Russian Competition

Russian competition was not as decisive a factor in the export market during the first half of the year as was the case in 1932. On the contrary, Russia was a buyer of gasoline in both the California and Gulf markets during the period, particularly at the latter point where a number of cargoes of motor fuel were purchased for shipment to Russian Oil Products Co., British marketing subsidiary of the Soviet, during the period in which Russian shipments to England were under embargo.

Rumanian competition in world markets, however, came more strongly to the fore this year and while this competition was controlled, in part, by heavy purchases from Rumania by major world companies, low prices quoted f.o.b. Constanza during the first quarter effectively diverted considerable cargo business from the American market.

Gasoline

Improved foreign demand for gasoline brought about a substantial recovery in export shipments from New York during the first half of the year, exports for the period totaling 3,896,000 gallons, against 1,804,000 gallons in the first half of 1932; 5,184,000 gallons in the first six months of 1931, 9,378,000 gallons in the first half of 1930, and 13,552,000 gallons in the comparable months of 1929. With a continuance of the present exchange situation, refiners look for a favorable export movement of motor fuel during the closing half of the year.

Naphtha

Naphtha exports for the first half of the year showed a slight decline, totaling 4,584,000 gallons, against 4,777,000 gallons in the first half of last year, 7,278,000 gallons for the first six months of 1931, 22,052,000 gallons in the first six months of 1930, and 32,512,000 gallons in the comparable period in 1929.

Kerosene

The decline in demand for cased kerosene brought about a further recession in local exports in the first six months of 1933, shipments aggregating only 1,188,000 gallons, against 1,372,000 gallons in the comparable period last year, 2,207,000 gallons in the first six months of 1931, 4,990,000 gallons in the first half of 1930, and 10,476,000 gallons in the similar period in 1929. Competition from refiners in the Caribbean area was responsible in part for the drop, while Rumanian competition in European markets was also a factor. No signs of improvement in export kerosene demand for the closing half of the year are evident.

Fuel and Gas Oil

An increase of almost 2,000,000 gallons in fuel and gas oil exports developed during the period under review, exports totaling 4,922,000 gallons, against 2,948,000 gallons in the comparable months last year, 2,260,000 gallons in the first six months of 1931, and 2,154,000 gallons and 2,062,000 gallons, respectively, for the first half of the previous two years.

Lubricating Oil

The lubricating oil situation presented the most favorable aspect of the local export period during the first half of 1933. A total of 45,313,000 gallons were exported during the period, a gain of more than 14,000,000 gallons over the exports of 31,121,000 gallons during the first half of the previous year, and likewise exceeding the exports of 42,935,000 gallons in the first half of 1931, and falling just short of the export total of 45,393,000 gallons recorded for the first half of 1930. An encouraging factor with respect to lubs is that much of the increased movement came at a time when prices were rising rapidly.

Refined Petroleum

A further reduction in export gallonage was shown by exports classified merely as "petroleum, refined," shipments for the first half of the year aggregating 6,611,000 gallons, against 7,727,000 gallons, 20,948,000 gallons, 35,028,000 gallons and 43,661,000 gallons, respectively, for the comparable months of 1932, 1931, 1930 and 1929. Cased kerosene and gasoline make up the most part of the gallonage under this classification.

Lub Grease

A slight pickup in foreign shipments of lubricating grease developed during the half year, exports totaling 16,542,000 pounds, against 15,929,000 pounds in the corresponding months of the previous year, and 22,235,000 pounds in the first half of 1931. During the first six months of 1930 exports of this product totaled 27,839,000 pounds, while export shipments for the comparable months of 1929 totaled 30,840,000 pounds. More lubricating grease is being manufactured in foreign plants than was formerly the case, while the general slackening in industrial activity throughout the world has also been a factor making for curtailed consumption.

Paraffin Wax

American wax regained some of its popularity in foreign markets, exports from New York for the half year reaching a total of 55,162,000 pounds, a substantial improvement over the exports of 38,055,000 pounds in the first half of 1932, and likewise in excess of the 41,553,000 pounds exported in the first six months of 1931. Export totals for the first six months of 1930 and 1929, which pounds, respectively, were also outwere 33,872,000 pounds and 36,653,000 stripped in the first six months of the current year.

Exports of crude scale wax also increased during the period at 7,481,000 pounds, against 5,158,000 pounds in the first half last year, 14,520,000 pounds in the first six months of the year previous, 15,804,000 pounds for the first half of 1930, and 11,399,000 pounds in the first six months of 1929.

Refined wax exports also increased, at 6,200,000 pounds, almost double the 3,206,000 pounds exported in the first six months of 1932, and likewise in excess of the exports of 5,505,000 pounds in the comparable period of 1931, although falling short of the 1930 half-year total of 6,708,000 pounds.

A COMPARISON OF EXPORTS OF REFINED PETROLEUM PRODUCTS FROM THE PORT OF NEW YORK
(By quarters for 1933 and the previous three years)

	First quarter 1933	1932	1931	1930	Second quarter 1933	1932	1931	1930
	Gasoline							
Gasoline	1,819,000	1,075,000	2,815,000	5,269,000	2,077,000	729,000	2,370,000	4,109,000
Naphtha	2,708,000	2,754,000	4,038,000	14,732,000	1,876,000	2,023,000	3,240,000	7,330,000
Kerosene	663,000	928,000	1,304,000	2,552,000	525,000	444,000	903,000	2,438,000
Fuel and gas oil	2,675,000	728,000	1,335,000	672,000	2,247,000	2,220,000	925,000	1,482,000
Lub. oil	20,562,000	17,676,000	19,086,000	24,107,000	24,751,000	13,445,000	23,867,000	21,286,000
Pet. refined	3,825,000	4,937,000	11,653,000	20,020,000	2,786,000	2,790,000	9,295,000	15,008,000
	Pounds							
Petrolatum	283,000	315,000	721,000	569,000	370,000	80,000	794,000	482,000
Lub. grease	8,605,000	8,914,000	13,245,000	15,005,000	7,937,000	7,015,000	9,990,000	12,831,000
Paraffin wax	26,373,000	23,550,000	21,060,000	19,318,000	28,789,000	14,475,000	20,493,000	14,554,000
Scale	3,076,000	4,690,000	6,525,000	8,472,000	4,405,000	468,000	7,995,000	7,322,000
Refined	1,033,000	1,370,000	3,090,000	4,542,000	5,167,000	1,336,000	3,415,000	2,166,000

Eastward Shipments of Gasoline From California Gain, Other Oils Move in Larger Volume

By A. E. MOCKLER
New York Bureau, The Oil and Gas Journal

For the first time in the past five years shipments of California gasoline to Atlantic and Gulf Coasts, principally the former, registered an increase for the first six months of the year over the comparable total for the same months in the previous year, shipments during the period having been 4,292,000 bbls., against 4,160,000 bbls. in the comparable period of 1932; 8,211,000 bbls. in the first half of 1931; 8,789,000 bbls. in the first six months of 1930, and 9,527,000 bbls. in the comparable months of 1929.

Of still greater interest to the eastern trade, however, was the resumption of the movement of California fuel oil eastward this year, and the relatively heavy movement of California kerosene to the Atlantic seaboard, principally into the New England area, where a record demand for kerosene distillate is reported. In addition, several cargoes of California gas oil have reached the eastern seaboard thus far in 1933. During the first six months of the current year a total of 841,000 bbls. of California kerosene was shipped intercoastal, with 2,192,000 bbls. of California fuel oil coming eastward, considerable of which was landed at Port Arthur. In addition, 215,000 bbls. of California gas oil was shipped to the Atlantic seaboard during the period, and 16,000 bbls. of California lubricating oil moved eastward.

California Outlook

As the second half of the year gets under way, trade reports indicate that a further increase in the movement of California refined oils to the Atlantic seaboard is in prospect. Eastern refiners are expected to continue to draw on the Pacific Coast for stocks of motor fuel, and California kerosene is likewise expected to move regularly into local territory. The movement of fuel oil will probably decline, owing to the ability of the oil companies to import fuel oil in bond during the closing half of the year, but it is expected that considerable quantities of California distillate will be shipped East during the fall and winter months for domestic heating oils.

An unlooked for factor which may upset plans for moving California oil into the eastern seaboard area and divert some of this business to the Gulf is the strengthening market for oil tankers to move the oil. Virtually a drug on the market during the first half of 1933, tankers are now so much in demand that a large number of American-flag vessels of this time have withdrawn from lay-up and placed into active operation. Only American-flag tankers are eligible for the intercoastal trade, and companies handling this traffic will be faced in some cases with the necessity for chartering foreign boats for some of their foreign runs to enable their American registry vessels to continue in the intercoastal run.

The import tariff on gasoline has had relatively little effect upon intercoastal shipments of motor fuel, which have increased largely due to the fact that refineries on the Atlantic seaboard have been operating on curtailed schedules, necessitating the "importation" of gasoline from California and the Gulf to round out requirements.

In connection with intercoastal shipments it is interesting to note that during the past few weeks the Texas Co. received its first shipments of California gasoline on the eastern seaboard, landing a 100,000-bbl. cargo at its terminals at Claymont, Del., and Norfolk, Va., although the company has hitherto shipped California gasoline to its Gulf Coast plants.

California Surplus

In common with other refining areas, California refineries have reduced their surplus stocks of motor fuel, holdings at refineries at the close of June comparing as follows:

	June 30—	
Refining area—	1932 (bbls.)	1933 (bbls.)
East Coast	5,588,000	6,063,000
Appalachian	1,207,000	1,509,000
Ind., Ill., Ky.	4,482,000	5,432,000
Okla., Kans., Mo.	2,599,000	3,246,000
Texas	7,500,000	6,209,000
La.-Ark.	161,000	1,509,000
Rocky Mts.	1,073,000	1,793,000
California	6,493,000	13,062,000
Total	29,103,000	38,823,000

With the statistical position of the gasoline market in California thus showing a marked improvement this year, refiners in that area have shown less disposition to endeavor to unload surplus stocks through the medium of cut prices, and motor fuel quotations at California points are now nearer a parity with other refinery areas.

While some cargoes of California gasoline have moved to the East this year for distribution by independent marketing organizations, the bulk of the movement has been for the account of integrated companies with subsidiary refining organizations in California.

The increase in California shipments this year would have been much greater if the Richfield Oil Corp. of New York had continued its former policy of drawing its motor fuel requirements from the parent California company, but this business has been largely diverted to Arkansas refiners and to the Gulf market this year.

Sun Oil Co. continues a leading eastern distributor of California gasoline, with Socony-Vacuum, Tide Water, Atlantic Refining, and Standard of New Jersey also handling the Pacific Coast product.

Marketing Changes

The status of California gasoline in the eastern market will be vitally affected by the negotiations for the acquisition of the Richfield Oil Corp. of California, now in receivership. If, as now appears likely, Standard Oil Co. of California acquires the Richfield properties, it is expected that the present status of Richfield marketing will be continued, with its output going to supply Pacific Coast and export markets.

If, on the other hand, Consolidated Oil Corp. succeeds in its efforts to take over the Richfield company, or if Cities Service should win out in the race, it is probable that a heavier movement of the Richfield refinery output of gasoline to the East will be witnessed.

The future of the proposed Standard of New Jersey-Standard of California merger will also have a vital bearing on the intercoastal trade in gasoline.

While California gasoline in previous years has been much in demand for distribution in the East as a premium quality motor fuel, the rapid strides which have been made this year in stepping up the antiknock qualities of gasoline produced at East Coast refineries has radically altered the situation, and the Pacific Coast motor fuel is now considered "just another good gasoline" in eastern trade circles.

Many consumers in the aviation industry, however, still continue to show a marked preference for California gasoline as airplane motor fuel.

Comparison of Receipts

A comparison of California gasoline receipts at Atlantic and Gulf Coasts (principally the former) by quarters for the first half of 1933 and the corresponding periods during the past four years follows:

	First quarter (bbls.)	Second quarter (bbls.)
1933	1,861,000	2,431,000
1932	1,915,000	2,244,000
1931	4,403,000	3,808,000
1930	4,698,000	4,091,000
1929	4,827,000	4,700,000

First Six Months' Imports Limited to Crude and Fuel Oil as Tariff Shuts Out Gasoline

By A. E. MOCKLER
New York Bureau, The Oil and Gas Journal

A sharp curtailment in import movement of petroleum and refined products characterized the market during the first six months of 1933, resulting in the diversion of considerable domestic business for refined products to petroleum refined in the United States, with these diversions balanced, in large measure at least, by the transference of export oil shipments, formerly made by tanker out of East Coast and Gulf refining ports, to refining plants in the Caribbean area. Gasoline imports have been entirely lacking thus far in 1933, due to the heavy tariff now in effect against imports of motor fuel, while receipts of foreign crude and fuel oils, which constituted all of the import movement in the first half of the year, were smaller than comparable 1932 levels. In the first half of the past year, however, it must be recalled that imports were abnormally large, due to the fact that major companies with production and refineries in Mexico and South America were rushing in imports to get ahead of the import duties which became effective last June. In as much as gasoline imports in the first half of 1932 amounted to 7,365,000 bbls., it is evident that the domestic market has benefited considerably from the stoppage of imports of motor fuel, even in the face of the slight drop in the consumption of gasoline in the United States this year.

Increase Expected

While import totals on petroleum were smaller for the six months ended June 30 than was the case in comparable periods of recent years, it is indicated that the import movement for the closing half of the year will record some improvement over that for the first six months, due to the fact that effective June 1 importers are now permitted to bring bunker oil into this country in bond, with the oil thus imported to be used for fueling foreign-flag steamships bunkering at American ports. Similarly, foreign crude oil can now be imported to be refined at plants in this country for export, under the drawback provisions of the customs regulations, and this is expected to swell the import movement of crude during the closing half of the year. Thus, while actual imports will be larger than was the case for the six months ended June 30, in all probability, export sales will show a corresponding increase, and the amount of actual foreign oil to reach American consuming markets is expected to continue small, particularly so in view of the declaration embodied in the industry's code of fair trade practices against any substantial increase in the importation of foreign petroleum for sale in domestic markets.

A comparison of imports of crude petroleum, fuel and gas oils, and gasoline, by quarters, for the first half of 1933 and 1932:

(Barrels of 42 gallons)

	First quarter—	
	1933	1932
Gasoline		3,778,000
Fuel and gas oil	4,237,000	6,296,000
Crude oil	8,007,000	11,024,000

	Second quarter—	
	1933	1932
Gasoline		3,435,000
Fuel and gas oil	2,547,000	6,211,000
Crude oil	6,090,000	13,764,000

With world oil consumption expected to show an increase as industrial recovery makes further progress, producers in Mexico and South America are extending their operations, and while their shipments to the United States for sale in this country will continue limited, they evidently are attempting to establish themselves in as many markets as possible before the advent of Iraq oil on world markets, some time late in 1934.

Continued importation of crude and fuel oils into the United States, in the face of the tariff imposed on imports of these oils, bears out the statements of major companies that certain types of special crudes, not economically available in the United States, are essential for their operations, particularly in the bunker oil market. Practically the entire import movement of these oils thus far in 1933 has been to Atlantic Coast ports, mainly at Philadelphia and New York.

May Ask for Higher Tariffs

Despite the sharp drop in import movement of petroleum, it is reported that some interests in the oil industry will renew their efforts for a further increase in tariffs against oil imports at the next regular session of Congress. These interests, it is reported, desire a flat minimum duty of $1 per barrel on both crude and fuel oils. Enactment of such legislation

would seriously jeopardize the bunker oil business of Atlantic Coast ports, and would undoubtedly either drive this business to Russia and Rumania or force the American companies involved to increase their refining activities abroad and transfer much of their bunker oil selling activities to American ports. The average oil burning vessel, it is pointed out, could readily bunker for a round voyage on the other side of the ocean, if the saving in oil costs warranted such a step. A reaction such as this would not only intensify the unemployment situation in the petroleum industry, but would likewise deprive this Government of considerable tax revenue, which would go to foreign nations to whose ports the bunker oil trade might be transferred. Not only would Atlantic Coast markets be affected, but bunker oil business at the Gulf would undoubtedly seriously suffer from intensified competition from refineries in the Caribbean area.

Gasoline

No imports of gasoline were reported during the first half of the year, with a total of 7,263,000 bbls. imported during the first six months of the past year, and 6,705,000 bbls. during the first six months of 1931.

Revised regulations by the Treasury Department this year effectively shut out the importation of motor fuels which had been coming into this country under the classification of "painters' naphtha" and "cleaners' solvent."

Fuel and Gas Oil

There was a sharp contraction in fuel and gas oil imports during the first six months of 1933, a total of 6,784,000 bbls. being brought in during the period, as compared with 13,107,000 bbls. during the first half of 1932 and 11,038,000 bbls. in the comparable months of 1931.

With the revision, effective July 1, of import restrictions, permitting the importation of bunker oil in bond for delivery to foreign flag vessels taking on fuel oil bunkers at American ports, it is indicated that there will be a sharp recovery in fuel oil prices during the closing half of 1933. A number of tankers have been put back into service to enter the South American run.

Crude Oil

Crude oil imports during the first half of 1933 were less than half of those for the corresponding months of 1932, totaling 14,097,000 bbls., as contrasted with 29,788,000 bbls. in the first six months of 1932 and 24,883,000 bbls. for the first half of 1931. The imports during the first six months last year were abnormally high, a total of 18,764,000 bbls. being rushed in during the second quarter of 1932 as refiners sought to accumulate storage holdings of foreign oil in anticipation of the tariff which became effective late in June.

A moderate increase in crude imports during the closing half of the current year is indicated, with this oil to be refined at Atlantic Coast refineries for export, with drawback allowance for the refined products exported.

First Half Year in Kansas Reported More Completions

(Continued from Page 71)

lieved to have helped them increase their production. One of the wells was reported to have increased 300 per cent after the treatment.

Extended Ritz-Canton

The Ritz-Canton Pool in McPherson County continued to be one of the active areas in the State during the first six months of the year. The Viola lime production was extended in February by Tom Palmer and others' No. 1 B. Winn, NE cor. NW SE Section 7-20-2w. The well was completed for 20 bbls. a day. It extended production in the Viola lime to the west in the south end of the field.

In April potential tests in the Ritz-Canton Field showed a big decline compared to the previous potential. The potential production of the 181 wells at that time was 37,242 bbls. compared to 90,410 bbls. on the previous test. The 72 chat wells in the field had a potential of 4,317 bbls. and the 109 Viola lime wells 32,925 bbls. This test was taken over a 48-hour period from April 1 to 3.

An interesting wildcat test was drilled in Pratt County. It was Ninnescah Oil & Gas Co.'s No. 1 Hardesty, SW cor. SE SE Section 28-27-11w, in the northeast corner of the county, found a showing at 3,621-42 feet. Oil rose 700 feet in the hole. It was drilled deeper to 3,965-71 feet, where another showing of oil and gas was found. The well was still drilling on June 30.

Schurr Pool Partly Defined

The Schurr Pool in Rice County, near Raymond, was defined on the east in April by a dry hole. The well was J. McMorrow and Shawver Oil Co.'s No. 1 Kelly, SW cor. NW Section 22-20-10w. It was started about two years ago and drilled to 2,595 feet, where it made approximately 2,000,000 feet of gas and was shut in. It was drilled to the Siliceous lime at a total depth of 3,382 feet, where it found water and was abandoned.

Pennsylvania Grade Fields Suffer Sharp Decline in Field Work in First Half

Completions in the Pennsylvania grade area during the first half of 1933 showed a decided drop in number as compared with the same period in 1932 and daily initial production from the new wells was less than half of that recorded during the first half of the year previous. The number of dry holes was considerably less and the number of gas well completions was nearly that of the 1932 period, indicating that the first half of 1933 was devoted more to the search for gas than for oil.

With Pennsylvania grade crude being quoted at the lowest prices since 1898 and with curtailment in effect in all areas there was little incentive for development work and the additional outpouring of crude.

Bradford was the banner field in new completions during the first half of 1933 but trailed both West Virginia and Southeast Ohio in the amount of initial production from drilling activity. In the Bradford Field a great number of pressure wells were put down in the first half year with the oil producing wells to be put down about a year after the drilling of the pressure wells.

West Virginia led in the number of gas wells completed and Southeast Ohio in the amount of new production.

June led in the number of completions and reflected the lifting of curtailment and the increasing price for crude. The second half of 1933 is expected to witness considerable gain in field activity in the Pennsylvania grade area.

The tabulation for the first half of 1933 shows a complete reversal of conditions over the first six months of 1932. Last year the heavy initial production was from the northern fields, the Bradford-Allegany fields showing heavy gains in completions and production, while in 1933 the initial production gain was recorded as coming from West Virginia and Southeast Ohio.

EASTERN FIELDS

A summarized comparison of the Pennsylvania grade area for the first six months of 1933 and 1932 shows the following:

	Comp.	Prod.	Dry	Gas
Jan.-June, 1933	458	1,429	62	127
Jan.-June, 1932	738	2,884	111	147
Difference	280	1,455	49	20

A field by field comparison for the two periods shows:

First Half of 1933

Field—	Comp.	Prod.	Dry	Gas
Allegany	22	75	0	0
Bradford	170	331	9	1
Venango-Clarion	26	18	3	10
Butler-Armstrong	14	22	2	2
Middle Field	3	7	0	0
N. Y.-Pa. gas	39	0	16	23
Southwest Pa.	16	62	5	5
West Virginia	109	428	19	68
Southeast Ohio	59	486	17	18
Total	458	1,429	62	127

First Half of 1932

Field—	Comp.	Prod.	Dry	Gas
Allegany	87	587	2	1
Bradford	256	883	0	0
Venango-Clarion	36	30	3	8
Butler-Armstrong	16	20	2	3
N. Y.-Pa. gas	43	3	24	18
Middle Field	16	24	2	2
Southwest Pa.	39	67	13	0
Southeast Ohio	117	980	42	12
West Virginia	137	290	23	93
Total	738	2,884	111	147

UNION GAS-OSAGE SALE

Sale of properties of the Union Gas Corp. and the Osage Gas Producing Co. for $103,300 to Donald E. Stewart, agent for the Union Gas system, was announced by Thomas E. Wagstaff, named a special master in the case by Federal Judge Franklin E. Kennamer.

Mr. Stewart represented holders of $2,400,000 of the company's bonds. The firm owns gas leases and pipe lines in Osage and Washington Counties, Oklahoma. The property recently was appraised at $154,937.

Lining Up Pipe on Iraq Line in Palestine

Few New Discoveries in Rocky Mountain Fields

(Continued from Page 80)

field have not been defined in any direction and on the northeastern side it is expected to connect up with the Cut Bank gas area. At present the crude is being marketed to local refineries and in Canada, being trucked to destination. One or more pipe lines shortly will be serving the field. Drilling is entirely with cable tools, but the Texas Co. is moving in a rotary which will determine the advantages, if any, of that type of rig. The average cost of wells is $18,000, including everything.

The new pool discovered is the North Cut Bank, 3 miles south of the Canadian boundary, 13 miles north of the nearest producer in the Cut Bank Field proper, 7 to 8 miles southwest of the Border Field and due north of the Cut Bank gas area. The discovery was made in the Santa Rita Oil & Gas Co. and P. J. Sweeney's No. 1 Jacobson, C NW NW, Section 23-37-5w. It had 1,000,000 feet of gas in the top of the Stewart sand at 2,561 feet and a show of oil. It swabbed 90 bbls. in 24 hours and then went into the Darling sand at 2,625 feet and began flowing by heads. At 2,633 feet it ran into water and it is being plugged back to 2,628 feet. The oil is 28 gravity, a different grade from that found at Cut Bank, and evidently the well is on a separate structure, or terrace, as it runs 400 to 500 feet higher than the Cut Bank producers. This is the only well so far drilled on the structure and the value of the discovery can not yet be fully appraised.

In the Dry Creek Field, in Carbon County, the Ohio Oil Co.'s No. 9 Souders, C NE SW, Section 2-7s-21, was completed in the Lakota sand at 5,471-5,502 feet for 1,000 bbls. per day. It is half a mile northeast and the same distance northwest of the nearest producers. The company had several rigs up for additional wells, but no further drilling is expected this year following an extension of permits by the Government. The oil is of a very high grade, testing 52 gravity.

MONTANA

Summary of Wells Completed First Six Months of 1933

County—	Comp.	Prod.	Dry	Gas
Carbon	1	150	0	0
Glacier	12	1,101	0	1
Liberty	1	5	0	0
Phillips	1	0	0	1
Sweetgrass	1	0	1	0
Toole	1	0	1	0
Yellowstone	1	0	1	0
Total	18	1,256	3	2
Same period 1932	14	5,356	5	1
Difference	4	4,100	2	1

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	3	60	1	0
February	7	277	2	0
March	2	75	0	1
April	3	65	0	1
May	2	195	0	0
June	2	534	0	0
Total	18	1,256	3	2

UTAH

A few small wells at shallow depths in the Virgin Field in Washington County, comprised the only developments in Utah during the first six months of 1933. Little progress was reported in wildcatting and no important tests were drilled to completion.

UTAH

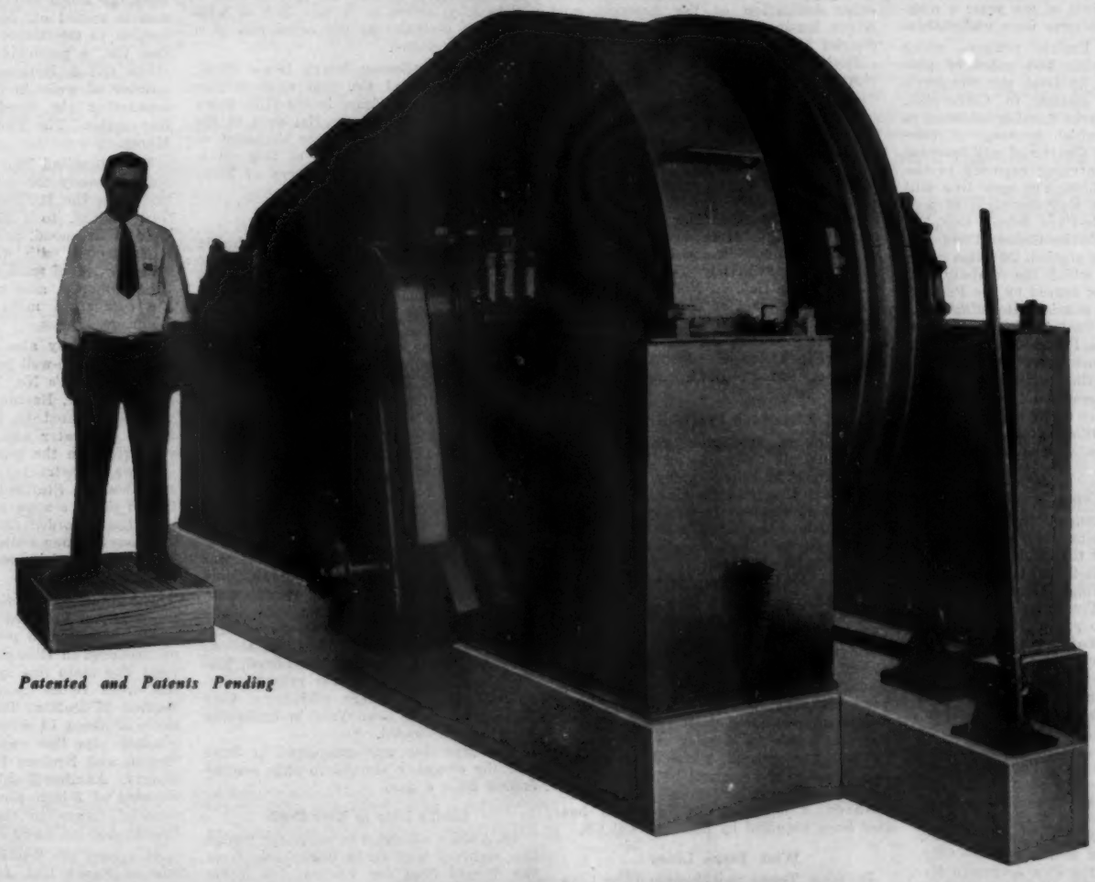
Summary of Wells Completed First Six Months of 1933

County—	Comp.	Prod.	Dry	Gas
Grand	1	0	1	0
Washington	3	2	1	0
Total	4	2	2	0
Same period 1932	1	35	0	0
Difference	3	33	2	0

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	2	0	2	0
February	0	0	0	0
March	0	0	0	0
April	0	0	0	0
May	0	0	0	0
June	2	2	1	0
Total	4	2	3	0

Type 95
OCS
Universal Rig Fronts



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New Pipe Lines in Texas, Oklahoma, Kansas and Other Oil States in First Half of the Year

A surprising amount of pipe line construction took place in the United States in the first half of the year. The work was scattered and little of it was of long lines, but summed up, the total indicated that a considerable number of new pools, and some old pools, were provided with either their first outlet or additional outlet for crude oil production.

The general oil activity which has been going on on the Gulf Coast has been reflected in pipe line construction. Although, with the exception of Sinclair Prairie Pipe Line Co.'s new 12-inch line to the coast from Colonel's Station in Freestone County, there were no major lines laid during the first half of the year, a number of smaller projects were undertaken.

The Sinclair Prairie project, which consists of relaying 140 miles of pipe which was taken up from the company's McLoud, Okla., station to Coffeyville, Kans., system, marks another addition to the many lines which converge at tidewater on the Gulf Coast and will increase that company's carrying capacity to the coast by 45,000 bbls. The new line will follow part of the way the right of way of the old Prairie-Pure 8-inch line but will swing through the Conroe Field and thence to Huffman station, 26 miles north of Houston, from which the company has a 12-inch line, now served by the Prairie-Pure line, to the Sinclair Refining Co.'s refinery at Sinco, east of Houston on the Ship Channel. The Prairie-Pure line, one of the earliest lines built to the coast, extends from Mexia, through Huffman, to Smiths Bluff, south of Beaumont. It has a rated capacity of 35,000 bbls. which will continue available for use of the Sinclair companies, which own a 50 per cent interest in it.

Adds to Conroe's Outlet

By swinging through the Conroe Field, the new line will provide an additional pipe line outlet for that field, now served by Humble Oil & Refining Co., the Texas Pipe Line Co., Tide Water Pipe Line Co. and Channel Transport & Marketing Co. Sinclair has no production of its own at Conroe but probably will be a strong competitor as a purchaser.

Laying of the new line was undertaken because of the expiration in September of a contract which the Sinclair company has with the Stanolind Pipe Line Co. for the transportation of 25,000 bbls. daily through the latter's trunk line from North and East Texas to the coast. That line, originally owned by the Sinclair companies, has its present terminus at the Sinclair refinery at Sinco, but it is now being extended from there to Texas City, where it will serve the Pan American Refining Corp., an affiliated company which is constructing a new 25,000-bbl. plant at that point. Material already is moving for the Stanolind extension, which will consist of 31 miles of 12-inch pipe.

Stanolind Pipe Line Co. also is engaged in another pipe line construction project on the coast consisting of the laying of 45 miles of 10-inch pipe from its Huffsmith station north of the new Tomball Field to Baytown. This line will follow the right of way of the company's present trunk line to as far as Dawes Switch, a place approximately 8 miles northeast of Houston where the main line turns southward to the Sinclair refinery at Sinco. Stanolind has extensive acreage holdings in the Tomball district, although no actual production as yet.

Lines to Tomball Pool

The discovery of production at Tomball has occasioned the laying of two other pipe line outlets, one by Humble Pipe Line Co. and the other by Magnolia Pipe Line Co. The Humble line, consisting of 18 miles of 8-inch pipe, extending from the field to Satsuma on the company's trunk system to the coast, already has been put in operation, although the field is less than two months old. Magnolia's line, only recently started, made up of approximately 17 miles of 8-inch pipe, still is under construction. It extends northward to Conroe where it will tie into the company's North Texas-Beaumont trunk system. A gathering system of 6, 8 and 10-inch pipe also is being laid.

The laying of these three lines out of Tomball so soon after the discovery of the field and before the potential value can be determined sets another precedent in pipe line construction but this is another indication of the sureness with which leasing and development in that district has been carried on.

Both Humble and Magnolia have provided pumping station and storage facilities on tracts south of the Tomball Field.

Other Conroe Outlets

Two additional pipe lines also have been laid out of the Conroe Field this year. Tide Water Pipe Line Co. put in 18 miles of 8-inch pipe from the field to Humble, where it ties in with Texas Pipe Line Co.'s line from Humble to Port Arthur. Channel Transport & Marketing Co. laid approximately 45 miles of 8-inch line from the field to Norsworthy on the Ship Channel east of Houston where the American Petroleum Co. has storage and terminal facilities. Besides these lines, Texas Pipe Line Co. looped its 8-inch line from Conroe to Big Spring, a distance of 14 miles.

Livingston Provided For

Proving of production at Livingston, southern Polk County, was the incentive for Shell Pipe Line Co. laying a 6-inch line from the field to Goodrich, a distance of approximately 6 miles, where the line ties into the company's East Texas-Houston trunk line. Two oil wells, one owned by Shell Petroleum Corp. and the other by Dick Schwab, have been completed in the field to date and the line has been running approximately 700 bbls. daily from each.

Laying of a second line from the field already has been started by the Polk County Pipe Line Co., which has just been organized by the Gem Oil Co., a Josey interest, and Dick Schwab. The line will consist of 6 miles of 6-inch pipe, running to Goodrich, where loading rack facilities and storage will be provided for handling the production of the Schwab holdings, a half interest in which has just been acquired by the Gem Oil Co.

West Texas Lines

In West Texas the Humble Pipe Line Co. started laying 24 miles of 6-inch line from the Penn Pool, Ector County, to the Addis and Cowden areas, east and northeast, but Elliott Cowden held up construction for more money for right of way. This led to a hearing at Odessa where the two disputants reached a decision on 50 cents per rod for right of way.

The Humble Pipe Line Co. took up 20 miles of 10-inch line in Comanche and Erath Counties during the half year and moved it to the newly opened Tomball area in Harris County, on the Gulf Coast. Several short connecting lines were laid in the district, such construction being necessitated by the discovery of new pools which needed outlets. All such lines were small and short, connecting from nearby pools or lines.

The Texas Pipe Line Co. removed 21 miles of 4-inch line which formerly served the Bulcher Pool in Cooke County, connecting with its Healdton, Okla., system.

California's Submarine Line

The only line of any consequence laid in California was a submarine pipe line that the Standard Oil Co. constructed to facilitate the loading or discharge of tankers at El Segundo. This line, 3,200 feet in length and consisting of 16-inch pipe, is supplemented by an 8-inch line located parallel to the 16-inch. The two lines are connected at the outer, or seaward end, in order to permit circulation and thus permit cleaning and flushing of the 16-inch submarine line. The submarine pipe line is indirectly connected with a 20-inch gravity line from the El Segundo tank farm, which in turn is hooked up with the company's El Segundo refinery. The seaward end of the line is over a mile from shore as it was tied in with existing facilities at the outer end of a 2,200-foot wharf.

In the Kettleman North Dome Field, the Superior Oil Co. laid a short line from its Huffman lease in the Hills down to a loading rack in the flat area of the valley in order to facilitate shipment of crude oil by trucks. Most of this oil is going to the Caminol's refinery at Hanford, about 20 miles distant.

Major Lines in Oklahoma

Pipe line activity in Oklahoma during the first part of 1933 was featured by two major projects, the laying of an 8-inch line from the Oklahoma City Field to a point near Thrall in Kansas, a distance of 210 miles, and the taking up of a 12-inch line from the Oklahoma City Field to a point near Coffeyville, Kans., a distance of 140 miles.

In March the first part of the Phillips Petroleum Co.'s 8-inch line from the Oklahoma City Field to its Yale station was being tested. It was the first link of the 210-mile pipe line from the Oklahoma City Field to Thrall, Kans., where it will connect with the company's line from Greenwood County to its refinery at Kansas City.

The second link of this pipe line was from the Yale station to the Burbank Field in Osage County and it was completed in April. Regular shipments through this line as far as the storage tanks in the Burbank Field started as soon as the pipe line was completed. The Phillips Petroleum Co. was running considerable oil from the Oklahoma City Field to storage near Yale in tanks the company purchased.

The pipe line was completed in June and the company started to ship around 50,000 bbls. a day.

Shell's Line to New Pool

In April a survey was made for a pipe line right of way for a 6-inch line from the Wentz Pool (or Lucien), in Noble County, to connect with the main pipe line system of the Shell Petroleum Corp., a distance of about 26 miles. In June work was started on the line from the company's main line system which runs north and south between Cushing and the Kansas State line. The pipe used in the construction of this line came from a line that was taken up from Stroud to Seminole. This was a twin pipe line and only one of the lines removed. The line was completed on July 1. The company asked for 12,000 bbls. a day from these wells but the Corporation Commission has granted only 8,000 bbls.

Holdenville to Allen

Mid-Continent Petroleum Corp. constructed about 8 miles of 3-inch pipe line from Holdenville to the Allen Field. This was an extension line and was completed in May. The same company completed about 6 miles of 4-inch pipe line from the St. Louis Pool to the West Konawa Pool, in Pottawatomie County.

The Tulsa Petroleum Corp. early in March constructed a 4-inch pipe line from the shallow wells in the West Holdenville Pool, in Hughes County, to a loading rack in Holdenville. The line was about 3 miles long.

Short Lines in Kansas

The pipe line construction work in Kansas mostly consisted of short lines. In February the Globe Oil & Refining Co. announced it would construct a 4-inch pipe line from its refinery at McPherson to the Mabee Pool, a distance of about 12 miles and to the Johnson Pool. The right of way of the pipe line followed the old U. S. Highway south to a point near the south end of the Voshell Pool, and it angled off in a southeasterly direction to the Mabee Pool. Lario Oil & Gas Co., a producing subsidiary of the Globe Oil & Refining Co., completed a number of wells in the Mabee Pool, necessitating the construction of a pipe line outlet. The line was completed in March.

The Stanolind Pipe Line Co. completed approximately 20 miles of 4-inch pipe line from the Richardson Pool, in Stafford County, to a point about 3 miles west of Raymond, in Rice County, where it connected with an 8-inch pipe line which is leased from the Sinclair Prairie Pipe Line Co. and which carries oil to the company's main line system near Eldorado.

The company also extended this pipe line to the one-well pool of the Stanolind Oil & Gas Co.'s No. 1 Scheufler, in Section 9-20-11w, Barton County. This line was constructed to avoid salt marshes where the water and soil have a corrosive effect on the pipe. A pumping station was constructed near the Richardson Pool, in Stafford County, to pump the oil to the station near Raymond. This pipe line afforded the company an outlet from its four wells in the Richardson Pool, which had a potential of 4,900 bbls. daily.

The Sunflower Refining Co. of Hutchinson in April started the construction of a new pipe line to provide an outlet for oil produced in Rice and Ellsworth Counties. The main line system was a 6-inch line from Lyons to the Orth Pool, in Section 27-18-10w, Rice County, a distance of about 14 miles. From this point a 4-inch pipe line was to be built to the Heiken and Breford Pools, in Ellsworth County. Another 3-mile line will be constructed of 3-inch pipe from the southwest of Lyons to the Chase Townsite Pool in Section 32-19-9w, Rice County.

At Lyons the 6-inch line will be tied into an 8-inch line, formerly used as a gas line owned by the Cities Service Co. and part of the natural gas system that delivered gas to various communities in Rice County. This 8-inch pipe line system has been taken over by the Sunflower Refining Co. under contract.

The construction work on the 6-inch pipe line was completed in May and the balance was still under construction when this was written.

The Sunflower Refining Co. is owned and operated by the following companies: Slick, Pryor & Lockhart, Darby Petroleum Corp., Dave Ainsworth and William Ainsworth, and C. L. Brown. These same operators are interested in a block of approximately 27,000 acres of leases, part of which are proven or semiproven in Rice and Ellsworth Counties.

Line to Nikkel and Hollow

The White Eagle Oil Co. constructed a short pipe line from the Ritz-Canton Field to the Nikkel Pool, in McPherson County, and then extended the line to

(Continued on Page 94)

Crude Oil Price Changes First Six Months 1933

GULF COAST

Gulf Coast Grade B, Refugio Light and Lockport

Gravity—	Jan. 1[1]	Jan. 1[2]	Jan. 19[3]	Jan. 20[4]	Mar. 6[5]	May 2[6]	June 17[7]	June 19[8]
Below 20	$.58	$.65	$.55	$.32	$.45	$.30	$.32	$.32
20 to 20.9	.60	.65	.55	.34	.45	.30	.34	.34
21 to 21.9	.62	.65	.55	.36	.45	.30	.36	.36
22 to 22.9	.64	.67	.56	.38	.46	.30	.38	.38
23 to 23.9	.66	.69	.57	.40	.47	.30	.40	.40
24 to 24.9	.68	.71	.58	.42	.48	.30	.42	.42
25 to 25.9	.70	.73	.59	.44	.49	.30	.44	.44
26 to 26.9	.72	.75	.60	.46	.50	.30	.46	.46
27 to 27.9	.74	.77	.61	.48	.51	.30	.48	.48
28 to 28.9	.76	.79	.62	.50	.52	.30	.50	.50
29 to 29.9	.78	.81	.62	.52	.53	.30	.52	.52
30 to 30.9	.80	.83	.64	.54	.54	.30	.54	.54
31 to 31.9	.82	.85	.65	.56	.55	.30	.56	.55
32 to 32.9	.84	.87	.66	.58	.56	.30	.58	.56
33 to 33.9	.86	.89	.67	.60	.57	.30	.60	.57
34 to 34.9	.88	.91	.68	.62	.58	.30	.62	.58
35 to 35.9	.88	.91	.69	.62	.59	.30	.62	.59
36 to 36.9	.88	.91	.70	.62	.60	.30	.62	.60
37 to 37.9	.88	.91	.71	.62	.61	.30	.62	.61
38 to 38.9	.88	.91	.72	.62	.62	.30	.62	.62
39 to 39.9	.88	.91	.73	.62	.63	.30	.62	.63
40 and above	.88	.91	.74	.62	.64	.30	.62	.64

[1]Effective December 15, 1932, by Humble Oil & Refining Co. in Goose Creek, Hull, Liberty, Orange, Pierce Junction, Mykawa, Moss Bluff, Raccoon Bend, Barbers Hill, Sour Lake, Spindletop, Sugarland, West Columbia, Humble, Rabbs Ridge and Refugio light oil. Sinclair Prairie Oil Marketing Co. in Boling, Barbers Hill and West Columbia, December 15. Magnolia Petroleum Co. in Lockport and Iowa, Louisiana, January 1, 1933.
[2]Texas Co., effective December 20, 1932.
[3]Texas Co., effective January 19.
[4]Humble Oil & Refining Co., Gulf Pipe Line Co., Magnolia Petroleum Co., Sun Oil Co., effective January 20.
[5]Texas Co., effective March 6.
[6]May 2 Humble Oil & Refining Co. withdrew gravity price schedule. Texas Co. and Shell Petroleum Corp. did the same May 3, Gulf Pipe Line Co. May 5 and Magnolia Petroleum Co. May 8.
[7]Sinclair Prairie Oil Marketing Co., effective June 17. Humble Oil & Refining Co. and Gulf Pipe Line Co., effective June 19.
[8]Texas Co., effective June 19. Magnolia Petroleum Co. June 20.
Jennings, La. (posted by Gulf Refining Co.)—January 1, 60 cents; January 20, 35 cents; May 5, 25 cents; June 19, 35 cents.
Cameron Meadows, La. (posted by Magnolia Petroleum Co.)—January 1, below 20 gravity, 48 cents; 20-20.9, 50 cents, with 2 cents added for each degree upward to 34 and above at 78 cents. January 20, below 20 gravity, 22 cents; 20-20.9, 24 cents, with 2 cents added for each degree upward to 34 and above at 52 cents.
Refugio, heavy (posted by Humble Oil & Refining Co.)—January 1, 65 cents; January 20, 45 cents; May 2, 30 cents; June 19, 45 cents.
Tomball, Tex. (posted by Humble Oil & Refining Co.)—June 19, 65 cents.
Livingston, Tex. (posted by Shell Petroleum Corp.)—June 30, 50 cents.

WEST TEXAS

	Jan. 1	Jan. 19	May 2	June 19	June 20
Crane, Upton, Ector, Crockett, Howard, Glasscock, Mitchell, Winkler and Pecos Counties	$1.50	[2]1.30	[3]1.20	$.30	....
Teborg, Pecos County[4]	....	.40	....	....	$.25

[1]Posted by Humble Oil & Refining Co., Gulf Pipe Line Co., Texas Co., Stanolind Oil & Gas Co. and Magnolia Petroleum Co. Shell Petroleum Co. paying 65 cents.
[2]Posted by Texas Co., followed January 20 by the other purchasers.
[3]Posted by Shell Petroleum Corp.
[4]Posted by Humble Oil & Refining Co., followed by other purchasers.
Lea County, New Mexico, see Rocky Mountain table.
Iatan and Westbrook, same as North Texas.

TEXAS PANHANDLE

Gray County

Gravity—	Jan. 1	Jan. 19[1]	Jan. 20[2]	Jan. 20[3]	May 2[4]	June 17[5]	June 19[6]
Below 35	$.56	$.36	$.34	....	$.20	....	$.34
35 to 35.9	.58	.38	.36	....	.20	....	.36
Below 36	....	....	....	$.30	....	$.30	....
36 to 36.9	.60	.40	.38	.32	.20	.32	.38
37 to 37.9	.62	.42	.40	.34	.20	.34	.40
38 to 38.9	.64	.44	.42	.36	.20	.36	.42
39 to 39.9	.66	.46	.44	.38	.20	.38	.44
40 and above	.68	.48	.46	.40	.20	.40	.46

[1]Posted by Texas Co.
[2]Posted by Humble Oil & Refining Co., Magnolia Petroleum Co. and Gulf Pipe Line Co.
[3]Posted January 20 by Philtex Oil Co.; February 28, Humble Oil & Refining Co.; March 6, Texas Co.; March 7, Magnolia Petroleum Co.
[4]Posted May 2 by Humble Oil & Refining Co.; May 3, Texas Co.; May 6, Philtex Oil Co.; May 8, Magnolia Petroleum Co.
[5]Posted June 17 by Sinclair Prairie Oil Marketing Co.; June 19, Texas Co., Magnolia Petroleum Co., H. F. Wilcox Oil & Gas Co. and Philtex Oil Co.
[6]Posted by Humble Oil & Refining Co. and Gulf Pipe Line Co.

(Carson, Hutchinson and Moore Counties)

Gravity—	Jan. 1[1]	Jan. 1[2]	Jan. 19[3]	Jan. 20[4]	Jan. 20[5]	May 2[6]	June 17[7]	June 19[8]
Below 29	....	$.26	....	....	....	....	....	....
29 to 29.9	....	.28	....	....	....	....	....	....
30 to 30.9	....	.30	....	....	....	....	....	....
31 to 31.9	....	.32	....	....	....	....	....	....
32 to 32.9	....	.34	....	....	....	....	....	....
33 to 33.9	....	.36	....	....	....	....	....	....
Below 34	....	....	$.31	$.29	....	....	....	....
34 to 34.9	....	.38	....	....	....	....	....	....
Below 35	$.51	....	....	....	....	....	....	$.29
35 to 35.9	.53	.40	.33	.31	....	....	....	.31
Below 36	....	....	....	....	$.20	$.18	$.20	....
36 to 36.9	.55	.42	.35	.33	.22	.18	.22	.33
37 to 37.9	.57	.44	.37	.35	.24	.18	.24	.35
38 to 38.9	.59	.46	.39	.37	.26	.18	.26	.37
39 to 39.9	.61	.48	.41	.39	.28	.18	.28	.39
40 and above	.63	.50	.43	.41	.30	.18	.30	.41

[1]Posted December 15, 1932, by Humble Oil & Refining Co. and Continental Oil Co.; December 19, Gulf Production Co.; January 1, 1933, Magnolia Petroleum Co.
[2]Posted December 16, 1932, by Philtex Oil Co.
[3]Posted by Texas Co.
[4]Posted January 20 by Humble Oil & Refining Co., Magnolia Petroleum Co., Continental Oil Co. and Gulf Pipe Line Co.
[5]Posted January 20 by Philtex Oil Co.; February 28, Humble Oil & Refining Co. and Continental Oil Co.; March 6, Texas Co.; March 7, Magnolia Petroleum Co.
[6]Posted May 2 by Humble Oil & Refining Co.; May 3, Texas Co.; May 5, Gulf Pipe Line Co.; May 6, Philtex Oil Co.; May 8, Magnolia Petroleum Co.
[7]Posted June 17 by Sinclair Prairie Oil Marketing Co.; June 19 by Texas Co., Magnolia Petroleum Co. and Philtex Oil Co.
[8]Posted by Humble Oil & Refining Co. and Gulf Pipe Line Co.

CONROE

Gravity—	Jan. 1[1]	Jan. 19[2]	Jan. 20[3]	May 2[4]	June 19[5]	June 19[6]
35 to 35.9	$.80	$.59	$.54	$.30	$.59	$.59
36 to 36.9	.82	.60	.56	.30	.61	.60
37 to 37.9	.84	.61	.58	.30	.63	.61
38 to 38.9	.86	.62	.60	.30	.65	.62
39 to 39.9	.88	.63	.62	.30	.67	.63
40 and over	.90	.64	.64	.30	.69	.64

[1]Posted by Humble Oil & Refining Co. December 15, 1932.
[2]Posted by Tide Water Oil Co.
[3]Posted by Humble Oil & Refining Co. Texas Co. met Humble's prices March 6.
[4]May 2 Humble Oil & Refining Co. withdrew gravity price schedule. Humble's postings were followed by other purchasers with the exception of Tide Water Oil Co., which posted 40 cents a barrel for Conroe oil.
[5]Posted by Humble Oil & Refining Co.
[6]Posted by Texas Co. and Tide Water Oil Co. June 22 these two companies adopted the Humble's schedule.

SOUTH CENTRAL AND SOUTHWEST TEXAS

	Jan. 1	Jan. 20	Mar. 6	May 2	May 3	May 8	June 19
Darst Creek	$.60	[2]$.35	....	[3]$.23	....	....	[4]$.35
Luling	.50	[5].30	....	....	....	[6]$.20	[7].30
Mirando	.55	[8].35	....	[9].25	....	....	[10].35
Pettus	.50	[5].55	....	[5].35	....	....	[5].55
Salt Flat	[11].60	[5].40	....	[5].22	....	....	[5].40
Lytton Springs	.70	[12].45	....	....	....	[5].26	[5].45
Duval County	....	....	[6]$.35	....	[6]$.25	....	[5].25
Saxet	....	....	[5].45	....	[5].30	....	[5].45

[1]Magnolia Petroleum Co. January 1 was paying 75 cents for Salt Flat crude.
[2]Texas Co. January 19 posted 35 cents for Darst Creek; January 20 Magnolia Petroleum Co. posted 35 cents; Humble Oil & Refining Co. and Gulf Pipe Line Co. 40 cents.
[3]Magnolia Petroleum Co.
[4]Magnolia Petroleum Co. and Humble Oil & Refining Co.
[5]Humble Oil & Refining Co. and Gulf Pipe Line Co.
[6]Texas Co.
[7]May 2 by Humble Oil & Refining Co.; May 3, Texas Co.; May 5, Gulf Pipe Line Co.; May 8, Magnolia Petroleum Co.
[8]Humble Oil & Refining Co.
[9]May 2 by Humble Oil & Refining Co.; May 3, Shell Petroleum Corp.
[10]Texas Co. and Magnolia Petroleum Co. posted 35 cents for Darst Creek. Gulf Pipe Line Co. and Humble Oil & Refining Co. posted 40 cents.
[11]Magnolia Petroleum Co. posted 35 cents for Mirando. Humble Oil & Refining Co. posted 40 cents.
Thrall prices same as North Central Texas, less 19½ cents per cwt. freight.

EASTERN FIELDS

	Jan. 1	Jan. 21	May 9	May 22	June 17	June 26
Pennsylvania grade oil in National Transit lines (Pa.)[1]	$1.72	$1.47	$1.27	$1.37	$1.47	$1.57
Pennsylvania grade oil in Southwest Pennsylvania lines (W. Va.)[1]	1.42	1.17	.97	1.07	1.17	1.27
Pennsylvania grade oil in Eureka lines (Pa.)[2]	1.37	1.12	.92	1.02	1.12	1.22
Pennsylvania grade oil in Buckeye lines (Ohio)[1]	1.22	.97	.77	.90	.97	1.07
Corning grade oil in Buckeye lines (Ohio), 25-cent grade[1]	.85	.70	[3].50	.50	[3].60	[3].70
Ragland grade oil in Cumberland lines (Ky.)[1]	.60	..:.	....	....	....	....
Cabin Creek, W. Va.[4]	1.37	1.12	.92	1.02	1.12	1.22
Bradford Hollow, W. Va.[4]	1.37	1.12	.92	1.02	1.12	1.22
Kelly's Creek, W. Va.[4]	1.37	1.12	.92	1.02	1.12	1.22
Bradford district[5]	1.72	1.47	1.27	1.37	1.47	1.57
Allegany district[5]	1.72	1.47	1.27	1.37	1.47	1.57

[1]Posted by Joseph Seep Purchasing Agency.
[2]Posted by Pure Oil Co.
[3]Posted by Tide Water Pipe Line Co.
[4]Posted May 8.
[5]Posted June 19.
[6]Posted June 27.

MEXICAN CRUDES

	Jan.	Feb.	March	Apr.	May	June
Panuco heavy, f.o.b. Tampico	$.45	$.44	$.44	$.42	$.41	$.375

Note—Prices based on transactions of previous month.

OKLAHOMA, KANSAS, NORTH, CENTRAL AND EAST CENTRAL TEXAS

Gravity—	Jan. 1	Jan. 18[1]	May 2[2]	June 17[3]
Below 25	$.45	....	$.25	[4]$.20
25 to 25.9	.47	....	.25	4.22
26 to 26.9	.49	....	.25	4.24
27 to 27.9	.51	....	.25	4.26
28 to 28.9	.53	....	.25	4.28
Below 29	....	$.28	.25	.28
29 to 29.9	.55	.30	.25	.30
30 to 30.9	.57	.32	.25	.32
31 to 31.9	.59	.34	.25	.34
32 to 32.9	.61	.36	.25	.36
33 to 33.9	.63	.38	.25	.38
34 to 34.9	.65	.40	.25	.40
35 to 35.9	.67	.42	.25	.42
36 to 36.9	.69	.44	.25	.44
37 to 37.9	.71	.46	.25	.46
38 to 38.9	.73	.48	.25	.48
39 to 39.9	.75	.50	.25	.50
40 and above	.77	.52	.25	.52

Postings by Stanolind Crude Oil Purchasing Co., Texas Co., Continental Oil Co. and Sinclair Crude Oil Purchasing Co. include Oklahoma, Kansas and North Texas. Magnolia Petroleum Co. postings include Oklahoma, Kansas, North Texas, Panola County in East Texas, Lytton Springs and Somerset in Southwest Texas. Humble Oil & Refining Co. postings include North Texas, Ranger, Mexia, Powell, Richland, Wortham, Currie, Moran, Nocona, Lytton Springs and Corsicana light. Postings by Carter Oil Co. and Gypsy Oil Co. include Oklahoma and Kansas.

[1]Effective January 18, Stanolind Crude Oil Purchasing Co., Sinclair Prairie Oil Marketing Co.; January 19, Texas Co.; January 20, Magnolia Petroleum Co. (starting at below 25 degrees, 20 cents, with 2 cents added for each degree upward); January 20, Carter Oil Co. in Oklahoma and Kansas and Humble Oil & Refining Co. in North Central and East Central Texas; January 26, Gypsy Oil Co. in Oklahoma and Kansas and Gulf Production Co. in North, Central and East Central Texas; January 18, Globe Oil & Refining Co. and Tide Water Oil Co. in Kansas and Oklahoma; January 19, Empire Pipe Line Co., Shell Petroleum Corp.; January 18, in Oklahoma, Deep Rock Oil & Refining Co., Barnsdall Refineries, Inc., Continental Oil Co., Bell Oil & Gas Co., Tide Water Oil Co., Champlin Refining Co., Anderson-Prichard Corp., Cushing Refining Co., Eason Oil Co., Johnson Oil Refining Co., Mid-Continent Petroleum Corp., Pepper Gasoline Co., Sunray Oil Co., Yale Oil Corp., Twin State Oil Co., Rock Island Refining Co.; January 20, Philtex Oil Co. and Pure Oil Co.; Oklahoma and North Texas, January 18, Continental Oil Co.; Kansas, January 18, Eldorado Refining Co., Vickers Petroleum Co., Skelly Oil Co. (starting below 25 degrees, 20 cents, with 2 cents added for each degree upward); January 19, White Eagle Oil Corp.
[2]May 2 Humble Oil & Refining Co. posted a flat price of 25 cents a barrel for all gravities in North Central and East Central Texas. May 3 Stanolind Crude Oil Purchasing Co., Texas Co. and Sinclair Prairie Oil Marketing Co. did the same. May 5 Gulf Pipe Line Co. did the same. May 6 Stanolind and Shell Petroleum Corp. posted 25 cents in Kansas and Oklahoma. May 8 Carter Oil Co., Gypsy Oil Co., Sinclair Prairie and Empire Pipe Line Co. did the same. May 9 Texas Co. did the same. Magnolia Petroleum Co., effective May 9, posted the following prices in Oklahoma: Below 28 degrees, 20 cents; 28 to 34.9 degrees, 22 cents; 35 degrees and above, 25 cents. In

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the fields in which they are buying in Kansas or Oklahoma, or both, the following other companies posted 25 cents a barrel on the date named: Bell Oil & Gas Co., May 3; Barnsdall Refineries, Inc., May 6; Pure Oil Co., May 8; Mid-Continent Petroleum Corp., May 6; Skelly Oil Co., May 6; Vickers Petroleum Corp., May 7; Anderson & Prichard, May 6; Johnson Oil & Refining Co., May 6; Champlin Refining Co., May 6; Yale Refining Co., May 6; Eldorado Refining Co., May 6; Globe Refining Co., May 6; Rock Island Refining Co., May 8; White Eagle Oil Corp., May 9; Continental Oil Co., May 8.

[2]Effective June 17, Sinclair Prairie Oil Marketing Co., Stanolind Crude Oil Purchasing Co., Magnolia Petroleum Co., Continental Oil Co. Effective June 19, Empire Oil & Refining Co. Effective June 17, in Oklahoma alone, Barnsdall Refineries, Inc., Mid-Continent Petroleum Corp., Pure Oil Co., Deep Rock Oil Co., Globe Oil & Refining Co., Golden Rule Refining Co., Tide Water Oil Co. Effective June 17 in Kansas alone, Skelly Oil Co., Dickey Refining Co., Eldorado Refining Co., Derby Oil Co., Kanotex Refining Co. Effective June 19, Gypsy Oil Co. in Oklahoma and Kansas and Gulf Pipe Line Co. in Texas; Carter Oil Co. in Oklahoma and Humble Oil & Refining Co. in Texas; Texas Co. in Oklahoma and Texas. Effective June 20, Shell Petroleum Corp. in Kansas and Oklahoma. Effective June 17, H. F. Wilcox Oil & Gas Co. in Oklahoma.

[c]These graded prices on gravities below 29 were posted by Magnolia, Carter and Shell only.

EAST TEXAS

Jan. 1	Jan. 18[1]	Apr. 24[2]	Apr. 26[3]	June 17[4]
$.75	$.50	$.10	$.25	$.50

[1]Posted by Tide Water Oil Co. and Sinclair Prairie Oil Marketing Co., January 18; Shell Petroleum Corp., January 19; Texas Co., Magnolia Petroleum Co., Panola Pipe Line Co. and Humble Oil & Refining Co., January 20.

[2]Posted by Texas Co. April 24; by Humble Oil & Refining Co. and Stanolind Crude Oil Purchasing Co. April 25.

[3]Posted by Magnolia Petroleum Co. Other buyers, with the exception of Texas Co., adopted the Magnolia price. May 10 Texas Co. posted 25 cents a barrel. May 13 Humble Oil & Refining Co., which had withdrawn postings, adopted the 25-cent price.

[4]Posted by Sinclair Prairie Oil Marketing Co., Stanolind Crude Oil Purchasing Co. and Magnolia Petroleum Co. June 19 posted by Texas Co., Tide Water Oil Co., Panola Pipe Line Co., Humble Oil & Refining Co. and Gulf Pipe Line Co.

CORSICANA

	Jan. 1	Jan. 20	May 8	June 17
Corsicana, heavy[c]	$.50	$.30	$.20	$.30

[c]Magnolia Petroleum Co.

ARKANSAS-NORTH LOUISIANA

Caddo, Bull Bayou, Cotton Valley, Sarepta-Carterville, Rainbow, Crichton, DeSoto, Haynesville, Homer (La.), and El Dorado (Ark.)—

Gravity—	Jan. 1	Jan. 19[1]	Jan. 20[2]	May 3[3]	June 19[4]
Below 25 deg.	$.39	....	....	....	....
25 to 25.9	.41	....	....	....	....
26 to 26.9	.43	....	....	....	....
27 to 27.9	.45	....	....	....	....
28 to 28.9	.47	....	....	....	....
Below 29	....	$.28	$.20	$.25	$.28
29 to 29.9	.49	.30	.22	.25	.30
30 to 30.9	.51	.32	.24	.25	.32
31 to 31.9	.53	.34	.26	.25	.34
32 to 32.9	.55	.36	.28	.25	.36
33 to 33.9	.57	.38	.30	.25	.38
34 to 34.9	.59	.40	.32	.25	.40
35 to 35.9	.61	.42	.34	.25	.42
36 to 36.9	.63	.44	.36	.25	.44
37 to 37.9	.65	.46	.38	.25	.46
38 to 38.9	.67	.48	.40	.25	.48
39 to 39.9	.69	.50	.42	.25	.50
40 and above	.71	.52	.44	.25	.52

[1]Posted by the Texas Co., January 19; Louisiana Oil Refining Co. and Gulf Refining Co., January 20 (starting at below 25 degrees, 20 cents, with 2 cents added for each degree upward).

[2]Magnolia Petroleum Co., January 20; Standard Oil Co. of Louisiana, January 20, posted the following prices: Caddo, below 29 gravity, 20 cents; 40 gravity and above, 44 cents. Sabine and DeSoto, below 29 gravity, 25 cents; 40 and above, 49 cents. Homer, below 29 gravity, 28 cents; 40 gravity and above, 52 cents. Sarepta and Carterville, below 29 gravity, 17 cents; 40 gravity and above, 41 cents. El Dorado, below 29 gravity, 25 cents; 40 gravity and above, 49 cents. Haynesville, below 29 gravity, 19 cents; 40 gravity and above, 43 cents. The above all carry 2 cents differential for each degree in gravity. Smackover, all grades, 20 cents.

[3]Posted by the Texas Co. May 3, by Gulf Refining Co. of Louisiana and Standard Oil Co. of Louisiana May 6, by Magnolia Petroleum Co. May 8. Louisiana-Arkansas Pipe Line Co. posted 15 cents in Urania and 25 cents in other North Louisiana fields.

[4]Posted by the Texas Co., Gulf Refining Co. of Louisiana and Louisiana Oil Refining Co.; by Magnolia Petroleum Co. June 20. Standard Oil Co. of Louisiana, June 19, posted prices as follows (starting below 29 degrees, with 2 cents added for each degree upward to 40 and above): Caddo, 26-50 cents; Homer, 32-56 cents; Haynesville, 29-53 cents; Sabine, DeSoto, Carterville and Sarepta, 35-59 cents; El Dorado, 37-61 cents.

January 1, Smackover, all grades, posted by Magnolia Petroleum Co., Louisiana Oil & Refining Co., Texas Co.; Gulf Refining Co. of Louisiana, 50 cents; Standard Oil Co. of Louisiana, 30 cents; Root Refineries, 40 cents; Leon Oil & Refining Co. and McMillan Oil Products Co., 40 cents. Urania posted by H. L. Hunt, Inc., and Louisiana Oil & Refining Co., 55 cents. East El Dorado posted by Magnolia Petroleum Co. and Gulf Refining Co., 65 cents.

January 19, Smackover, all grades, posted by Texas Co., 30 cents; January 20, Standard Oil Co. of Louisiana, 20 cents; Magnolia Petroleum Co., 20 cents; Gulf Refining Co., 30 cents; Louisiana Oil Refining Corp., 25 cents. Urania posted by Louisiana Oil Refining Co. and H. L. Hunt, Inc., 25 cents; East El Dorado, January 20, Magnolia Petroleum Co., 20 cents; Gulf Refining Co., 30 cents.

May 3, Smackover, all grades, posted by Texas Co., 20 cents; May 6, Gulf Refining Co. and Standard Oil Co. of Louisiana, 20 cents. May 9, Urania, posted by H. L. Hunt, Inc., 30 cents. East El Dorado, May 3, Texas Co., 25 cents; May 6, Gulf Refining Co. and Standard Oil Co. of Louisiana, 25 cents; May 8, Magnolia Petroleum Co., 25 cents.

June 19, Smackover, all grades, posted by Texas Co., Standard Oil Co. of Louisiana and Magnolia Petroleum Co., 30 cents; Gulf Refining Co., 20 cents; Louisiana Oil Refining Corp., 25 cents. East El Dorado posted June 20 by Magnolia Petroleum Co., 20 cents; Gulf Refining Co., 30 cents. Philtex Oil Co., June 19, posted 20 cents for all grades in Union and Ouachita Counties, Arkansas.

CANADIAN FIELDS

	Jan. 1	Jan. 24
Petrolia[c]	$1.75	....
Oil Springs[†]	1.82	....
Turner Valley, Alta.:		
31-35.9	....	$1.41
36-49.9	....	1.90
40-44.9	1.56	....
45-49.9	2.18	....
50 and above	2.80	2.41

[c]Imperial Oil Ltd. [†]Imperial Oil, Ltd. and Regal Oil & Refining Co.

CENTRAL WEST FIELDS

	Jan. 1	Jan. 18	May 9	June 16
Lima[1]	$1.00	$1.70	$1.55	$1.75
Wooster[1]	.95	.70	1.50	.60
Illinois[1]	.87	.62	.47	.67
Indiana[1]	.52	.40	.25	.45
Princeton[1]	.87	.62	.47	.67
Plymouth[1] (shut in)	....	....	....	....
Western Ky.[1]	.82	.57	.42	.62
Midland, Mich.[2]	.95	....	1.75	....
Somerset, Ky.[3]	.65	.45	.50	.60
Hart Co., Ky.[4]	.85	.85	....[5]	....
Muskegon	5.95	....	....	....

[1]Posted by Ohio Oil Co.
[2]Posted by Pure Oil Co.
[3]Purchased by Ashland Refining Co., Ashland, Ky., and delivered through its own pipe line.
[4]Posted by Stoll Refining Co.
[5]Posted by Old Dutch Refining Co., Naphsol Refining Co. paying Mid-Continent gravity scale. Beginning January 18 both companies posted: Below 29 degrees, 51 cents, with 2 cents added for each degree upward to 40 and above at 75 cents. Beginning March 27 all purchasers paid $1.

[c]Posted January 10.
[†]Posted May 8.

ROCKY MOUNTAIN STATES

Ohio Oil Co. and Stanolind Oil & Gas Co.

	Jan. 1	Jan. 18	May 8	June 17
Iles, light	$.65	$.40	[1]$.25	$.40
Iles, heavy	.50	.34	....	.34
Florence	.57	....	.25	.30
Dutton Creek, Wyo.	.59	.34	.25	.34
Rock Creek, Wyo.	.67	....	....	.52
Frannie, light	.51	.31	.25	.31
Frannie, heavy	.41	.20	.20	....
Big Muddy	.75	....	[2].25	.46
Grass Creek	.87	.62	....	....
Grass Crk., heavy	.45	....	....	....
Elk Basin	.87	.62	....	....
Lance Creek	.92	....	....	....
Poison Spider	.70	....	....	....
Hudson	.65	....	....	....
Lander	.40	....	....	....
Rex Lake	1.10	....	....	....
Osage	.93	.62	....	....
Lost Soldier	.80	....	....	....
Hamilton Dome	.25	....	....	....
Torchlight	....	.62	.35	.62
Greybull	.87	.62	.35	.62
Cat Creek	.87	....	[3].35	.62
Pondera	.60	....	....	.75
Sunburst, Mont.	.75	....	[4].65	.80
Hogback, N. Mex.	.80	.65	.50	.65
Border, Mont.	1.55	....	....	....
Red Coulee, Alta.	1.55	....	....	....
Lea Co., N. Mex.	.50	.30	.20	.65
Maljamar	.45	.25	....	[5].35
Artesia-Jackson	.50	.30	....	[6].35

[1]Posted May 6, all grades.
[2]Posted May 6 by Continental Oil Co., May 8 by Ohio Oil Co.
[3]Posted May 6.
[4]Posted May 9.
[5]Posted June 19.

Note—Cat Creek, Hudson, Greybull, Hogback and Iles posted by Stanolind Oil & Gas Co. and remainder by Ohio Oil Co. Both companies posted Grass Creek light and Elk Basin. Lost Soldier posted by Producers & Refiners Corp. Artesia-Jackson and Maljamar posted by Continental Oil Co. Border and Red Coulee posted by Imperial Refining Co. Fort Collins, Wellington, Orchard, Florence, Rattlesnake and Table Mesa posted by Continental Oil Co. Fort Collins, Wellington and Greasewood are on contract basis. Osage posted by Arro Oil & Refining Co. Lea County at beginning of year posted by Shell Petroleum Corp. and Humble Oil & Refining Co.; January 20, by Humble Oil & Refining Co.; May 2, by Humble, followed by other purchasers; June 19, by all purchasers. Salt Creek and LaBarge follow Mid-Continent price schedule.

CALIFORNIA

STANDARD OIL CO. OF CALIFORNIA[a]

(For current purchases of crude at the well, unless otherwise specified. All gravities above those quoted take highest price offered in that field.)

Gravity—	Signal Hill Jan. 1	Signal Hill Mar. 5	Signal Hill June 26	Seal Beach, Alamitos Heights Jan. 1	Seal Beach, Alamitos Heights Mar. 5	Seal Beach, Alamitos Heights June 26	Huntington Beach Jan. 1	Huntington Beach Mar. 5	Huntington Beach June 26	Inglewood Jan. 1	Inglewood Mar. 5	Inglewood June 26	Playa Del Rey Jan. 1	Playa Del Rey Mar. 5	Playa Del Rey June 26	Olinda-Brea Canyon Jan. 1	Olinda-Brea Canyon Mar. 5	Olinda-Brea Canyon June 26
14-14.9	$.65	$.55	$.55	$.65	$.55	$.55	$.65	$.55	$.55	$.65	$.55	$.55	$.65	$.55	$.55	$.65	$.55	$.55
15-15.9	.65	.55	.55	.65	.55	.55	.65	.55	.58	.65	.55	.58	.65	.55	.55	.65	.55	.58
16-16.9	.65	.55	.55	.65	.55	.55	.65	.55	.60	.65	.55	.61	.65	.55	.58	.65	.55	.61
17-17.9	.65	.55	.57	.65	.55	.55	.65	.58	.63	.65	.58	.64	.65	.58	.61	.65	.58	.64
18-18.9	.65	.57	.60	.65	.55	.56	.65	.61	.65	.65	.61	.67	.65	.60	.64	.65	.61	.67
19-19.9	.65	.59	.63	.65	.57	.60	.65	.63	.68	.65	.64	.70	.65	.62	.67	.65	.64	.69
20-20.9	.69	.61	.66	.69	.59	.63	.69	.64	.71	.71	.67	.73	.69	.64	.70	.69	.66	.72
21-21.9	.74	.63	.69	.74	.62	.67	.74	.66	.73	.77	.69	.77	.74	.66	.73	.74	.68	.75
22-22.9	.79	.65	.71	.79	.64	.70	.79	.68	.76	.82	.71	.80	.78	.69	.76	.79	.70	.77
23-23.9	.84	.67	.74	.84	.67	.73	.84	.70	.78	.88	.73	.83	.82	.71	.79	.84	.72	.80
24-24.9	.89	.69	.77	.89	.69	.77	.89	.72	.81	.92	.75	.86	.86	.73	.82	.89	.73	.83
25-25.9	.93	.71	.79	.93	.72	.80	.93	.74	.83	....	....	....	.91	.75	.85	.93	.75	.85
26-26.9	.97	.73	.82	.97	.74	.83	.97	.75	.86	....	....	....	.96	.77	.88	.97	.77	.88
27-27.9	1.00	.75	.85	....	.76	.87	....	.77	.88	....	....	....	....	....	....	1.00	.79	.91
28-28.9	1.03	.77	.88	....	.79	.90	....	.79	.91	....	....	....	....	....	....	1.03	.81	.94
29-29.9	1.06	.79	.90	....	.81	.93	....	.81	.93	....	....	....	....	....	....	....	....	....
30-30.9	1.09	.81	.93	....	.84	.97	....	.83	.96	....	....	....	....	....	....	....	....	....
31-31.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
32-32.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
33-33.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
34-34.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....

Gravity—	Torrance Jan. 1	Torrance Mar. 5	Torrance June 26	Richfield Jan. 1	Richfield Mar. 5	Richfield June 26	Coyote Hills Jan. 1	Coyote Hills Mar. 5	Coyote Hills June 26	Santa Fe Springs Jan. 1	Santa Fe Springs Mar. 5	Santa Fe Springs June 26	Midway-Sunset, Elk Hills, Buena Vista Hills Jan. 1	Midway-Sunset, Elk Hills, Buena Vista Hills Mar. 5	Midway-Sunset, Elk Hills, Buena Vista Hills June 26	Lost Hills Jan. 1	Lost Hills Mar. 5	Lost Hills June 26
14-14.9	$.65	$.55	$.55	$.65	$.55	$.55	$.65	$.55	$.55	....	....	....	$.55	$.49	$.52	$.55	$.49	$.52
15-15.9	.65	.55	.55	.65	.55	.55	.65	.55	.55	....	....	....	.55	.49	.52	.55	.49	.52
16-16.9	.65	.55	.57	.65	.55	.55	.65	.55	.55	....	....	....	.55	.49	.52	.55	.49	.52
17-17.9	.65	.57	.60	.65	.56	.59	.65	.55	.57	....	....	....	.55	.49	.52	.55	.50	.52
18-18.9	.65	.59	.63	.65	.58	.62	.65	.57	.60	....	....	....	.55	.49	.52	.55	.52	.56
19-19.9	.65	.61	.65	.65	.61	.66	.65	.59	.63	....	....	....	.55	.49	.54	.55	.54	.59
20-20.9	.69	.62	.68	.69	.63	.69	.65	.61	.65	....	....	....	.59	.52	.57	.59	.56	.62
21-21.9	.74	.64	.70	.74	.66	.72	.66	.63	.68	..	$.57	$.60	.63	.55	.61	.63	.58	.65
22-22.9	.79	.66	.73	.79	.68	.75	.70	.65	.71	....	.59	.64	.69	.57	.65	.69	.60	.68
23-23.9	.84	.68	.75	.84	.70	.78	.76	.67	.73	....	.62	.67	.75	.60	.69	.75	.62	.70
24-24.9	.89	.70	.78	.89	.73	.82	.81	.69	.76	$.73	.64	.70	.81	.63	.73	.81	.63	.73
25-25.9	.93	.72	.80	.93	.75	.85	.86	.71	.79	.79	.66	.73	.87	.66	.76	.87	.65	.76
26-26.9	....	.73	.83	....	.77	.88	.90	.73	.82	.84	.69	.76	.92	.68	.80	.91	.67	.79
27-27.9	....	....	....	....	.80	.92	.94	.74	.84	.89	.71	.80	.97	.71	.83	.94	.69	.81
28-28.9	....	....	....	....	.82	.95	.98	.76	.87	.94	.73	.83	1.02	.74	.87	.99	.71	.84
29-29.9	....	....	....	....	.84	.98	1.02	.78	.90	.98	.76	.86	1.07	.76	.91	1.02	.73	.87
30-30.9	....	....	....	....	....	....	1.05	.80	.93	1.02	.78	.89	1.12	.79	.95	1.06	.75	.89
31-31.9	....	....	....	....	....	....	....	.82	.95	1.06	.80	.92	....	.82	.98	....	....	....
32-32.9	....	....	....	....	....	....	....	.84	.98	1.10	.83	.96	....	.85	1.02	....	....	....
33-33.9	....	....	....	....	....	....	....	.86	1 01	1.14	.85	.99	....	.87	1.06	....	....	....
34-34.9	....	....	....	....	....	....	....	.88	1.03	1.18	.87	1.02	....	....	....	....	....	....
35-35.9	....	....	....	....	....	....	....	....	....	1.22	.90	1.05	....	....	....	....	....	....
36-36.9	....	....	....	....	....	....	....	....	....	....	.92	1.08	....	....	....	....	....	....
37-37.9	....	....	....	....	....	....	....	....	....	....	.94	1.11	....	....	....	....	....	....
38-38.9	....	....	....	....	....	....	....	....	....	....	.96	1.14	....	....	....	....	....	....

(Continued on Next Page)

CALIFORNIA (Continued)
(Continued from Preceding Page)

Gravity—	Athens, Rosecrans, Dominguez			Montebello			Wheeler Ridge			Coalinga			Whittier-La Habra			Elwood Terrace (f.o.b. ship)		
	Jan. 1	Mar. 5	June 26	Jan. 1	Mar. 5	June 26	Jan. 1	Mar. 5	June 26	Jan. 1	Mar. 5	June 26	Jan. 1	Mar. 5	June 26	Jan. 1	Mar. 5	June 26
14-14.9	....	....	....	$.65	$.55	$.55	$.55	$.49	$.52	$.55	$.49	$.52	$.65	$.55	$.55	....	....	....
15-15.9	....	....	....	.65	.55	.55	.55	.49	.52	.55	.49	.52	.65	.55	.55	....	....	....
16-16.9	....	....	....	.65	.55	.55	.55	.49	.52	.55	.49	.52	.65	.55	.57	....	....	....
17-17.9	....	....	....	.65	.55	.55	.55	.49	.52	.55	.49	.52	.65	.57	.60	....	....	....
18-18.9	....	....	....	.65	.55	.55	.55	.49	.52	.55	.49	.52	.65	.59	.62	....	....	....
19-19.9	....	....	....	.65	.55	.55	.55	.49	.52	.55	.49	.52	.65	.61	.65	....	....	....
20-20.9	....	....	....	.65	.55	.55	.57	.49	.52	.59	.49	.53	.68	.63	.68	....	....	....
21-21.9	....	....	....	.67	.55	.58	.60	.50	.55	.62	.51	.56	.72	.65	.71	....	....	....
22-22.9	....	....	....	.70	.57	.60	.63	.52	.57	.65	.53	.59	.77	.67	.74	....	....	....
23-23.9	....	....	$.68	.73	.60	.64	.66	.54	.60	.68	.55	.61	.83	.69	.76	....	....	....
24-24.9	$.89	$.65	.71	.76	.62	.67	.69	.56	.63	.72	.57	.64	.89	.71	.79	....	....	....
25-25.9	.93	.68	.75	.80	.65	.71	.72	.58	.66	.75	.59	.67	....	....	....	....	....	....
26-26.9	.97	.70	.79	....	.68	.75	....	....	....	....	....	....	....	....	....	....	....	....
27-27.9	1.00	.73	.82	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
28-28.9	1.03	.75	.86	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
29-29.9	1.06	.78	.89	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
30-30.9	1.09	.81	.93	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
31-31.9	1.12	.83	.97	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
32-32.9	1.15	.86	1.00	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
33-33.9	....	.86	....	....	....	....	....	....	....	....	....	....	....	....	....	$1.04	$.83	$.91
34-34.9	....	.86	....	....	....	....	....	....	....	....	....	....	....	....	....	1.10	.85	.94
35-35.9	....	.86	....	....	....	....	....	....	....	....	....	....	....	....	....	1.16	.87	.97
36-36.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.22	.89	1.03
37-37.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.28	.91	1.03

*The Texas Co., January 1, 1933, was paying same prices as the Standard Oil Co. in Signal Hill, Alamitos Heights, Huntington Beach, Torrance, Richfield, Montebello, North Whittier and Santa Fe Springs.

*The Union Oil Co., January 1, 1933, was paying the same price as the Standard Oil Co. in the Signal Hill, Alamitos Heights, Seal Beach, Huntington Beach, Athens, Rosecrans, Domingues, Torrance, Santa Fe Springs, Playa Del Rey, Coyote, Olinda, Brea Canyon, Richfield and Montebello. In Coalinga, Lost Hills, Kern River, McKittrick, Midway-Sunset, Elk Hills and Buena Vista Hills the Union Oil Co. met the Standard Oil Co.'s prices from 14 gravity upward, but posted a price of 50 cents for oil 11 to 13.9 degrees in gravity.

*General Petroleum Co., January 1, 1933, was paying the same prices as the Standard Oil Co. in Rosecrans, Signal Hill, Alamitos Heights, Santa Fe Springs, Inglewood, Torrance, Brea Canyon and Olinda, up to 25.9 degrees; Richfield, Midway-Sunset, Kern River, Mount Poso, Round Mountain and Coalinga and posted in Rincon as follows: 22-22.9 degrees, 68 cents; 23-23.9 degrees, 73 cents; 24-24.9 degrees, 78 cents; 25-25.9 degrees, 82 cents; 26-26.9 degrees, 86 cents; 27-27.9 degrees, 89 cents; 28-28.9 degrees, 92 cents; 29-29.9 degrees, 95 cents, 30 degrees and over, 98 cents. In Rosecrans, General Petroleum Co. pays 65 cents for 14 to 19.9 gravity oil; 20-20.9 degrees, 69 cents; 21-21.9 degrees, 74 cents; 22-22.9 degrees, 79 cents; 23-23.9 degrees, 85 cents, and Standard's prices for oil of higher gravity.

*Associated Oil Co., January 1, 1933, was paying same prices as the Standard Oil Co. in Signal Hill, Huntington Beach, Seal Beach, Alamitos Heights, Richfield, Torrance, Inglewood, Athens, Rosecrans, Domingues, Santa Fe Springs, McKittrick, Kern River, Midway-Sunset, Elk Hills, Buena Vista Hills, Lost Hills, Belridge and Coalinga.

***Kettleman Hills**—The Union Oil Co., January 1, 1933, was paying for 33-33.9 gravity oil 91 cents; 34-34.9 degrees, 93 cents; 35-35.9 degrees, 95 cents; 36-36.9 degrees, 97 cents; 37-37.9 degrees, 99 cents; 38-38.9 degrees, $1.01; 39 degrees and over, $1.03. Standard Oil Co., Associated Oil Co. and General Petroleum Co. adopted same price schedule.

***Santa Paula**—The Union Oil Co. and the Texas Co., January 1, 1933, were paying as follows: 14 degrees to 19.9 degrees, 66 cents; 20-20.9 degrees, 69 cents; 21-21.9 degrees, 72 cents; 22-22.9 degrees, 75 cents; 23-23.9 degrees, 78 cents; 24-24.9 degrees, 81 cents; 25-25.9 degrees, 84 cents; 26-26.9 degrees, 87 cents; 27-27.9 degrees, 90 cents; 28-28.9 degrees, 93 cents; 29 degrees and above, 99 cents.

***Shields Canyon and South Mountain**—The Texas Co. posted same prices as in Santa Paula.

***Orcutt**—The Union Oil Co., January 1, 1933, was paying as follows: 16 degrees to 19.9 degrees, 55 cents; 20-20.9 degrees, 59 cents; 21-21.9 degrees, 63 cents; 22-22.9 degrees, 69 cents; 23-23.9 degrees, 75 cents; 24-24.9 degrees, 81 cents; 25-25.9 degrees, 87 cents; 26 degrees and above, 92 cents.

***Playa Del Rey**—Subject to a field gathering charge of 5 cents per barrel.

***Newhall, McKittrick and Kern River**—Standard Oil Co. posted 55 cents for oil of all grades.

***Ventura Avenue**—General Petroleum Co. and Associated Oil Co., January 1, 1933, were paying as follows: 22-22.9 degrees, 72 cents; 23-23.9 degrees, 77 cents; 24-24.9 degrees, 82 cents; 25-25.9 degrees, 86 cents; 26-26.9 degrees, 90 cents; 27-27.9 degrees, 93 cents; 28-28.9 degrees, 96 cents; 29-29.9 degrees, 99 cents; 30 degrees and over, $1.02.

Potrero—Associated Oil Co., January 1, 1933, was paying same prices as paid by all companies in Athens, Rosecrans and Dominguez

PRICE CHANGES OF MARCH 5

Signal Hill—Met on same date by the Texas Co., Union Oil Co. and General Petroleum Co. and Associated Oil Co.

Huntington Beach—The Texas Co., Union Oil Co., General Petroleum Co. and Associated Oil Co. schedules stop at 26-26.9 degrees, 75 cents.

Seal Beach, Alamitos Heights—The Texas Co. met all prices; Union Oil Co., General Petroleum Co. and Associated Oil Co. schedules stop at 26-26.9 degrees, 75 cents.

Athens, Rosecrans, Dominguez—Union Oil Co. schedule stops at 35.35.9 degrees, posting 32-32.9 degrees, 85 cents; 33-33.9 degrees, 87 cents; 34-34.9 degrees, 89 cents; 35-35.9 degrees, 90 cents. Associated Oil Co. met Standard Oil Co. schedule; General Petroleum Co. met Standard Oil Co. prices, stopping at 32-32.9 degrees at 86 cents.

Torrance—Met by the Texas Co. Met by Associated Oil Co., General Petroleum Co. and Union Oil Co., up to 25-25.9 degrees, at 75 cents.

Inglewood—Met by Associated Oil Co. and General Petroleum Co.

Playa Del Rey—(Prices subject to 5 cents per barrel gathering charge.) Met by Union Oil Co. schedule starting at 19 gravity.

Olinda-Brea Canyon—Met by Union Oil Co. Met by General Petroleum Co., up to 25-25.9 degrees, at 75 cents.

Santa Fe Springs—Met by the Texas Co., General Petroleum Co., Union Oil Co. and Associated Oil Co.; schedules start at 24-24.9 degrees, 64 cents, and end at 35-35.9 degrees, 90 cents.

East Coyote—Effective March 5, Union Oil Co.: 14 to 16.9 degrees, 55 cents; 17-17.9 degrees, 57 cents, with 2 cents added for each degree upward to 24.24.9 degrees, at 71 cents.

Richfield—Met by the Texas Co.; met by Union Oil Co. up to 25-25.9 degrees, at 75 cents.

Montebello—Met by Union Oil Co. up to 25-25.9 degrees, at 65 cents.

Kern River, Mount Poso, McKittrick, Sunset, Midway, Elk Hills, Buena Vista Hills—effective March 5, Union Oil Co.: 11-13.9 degrees, 44 cents; 14 to 19.9 degrees, 49 cents; 20-20.9 degrees, 52 cents; 21-21.9 degrees, 55 cents; 22-22.9 degrees, 57 cents; 23-23.9 degrees, 60 cents; 24-24.9 degrees, 63 cents; 25-25.9 degrees, 66 cents; 26-26.9 degrees, 68 cents; 27-27.9 degrees, 71 cents; 28-28.9 degrees, 74 cents; 29-29.9 degrees, 76 cents; 30-30.9 degrees, 79 cents. Associated Oil Co. schedule in Midway, Elk Hills and Buena Vista Hills starts at 11 to 13.9 degrees, 40 cents; same as Union Oil Co. schedule from 14 to 29.9 degrees; 30-30.9 degrees, 79 cents.

Montebello—Met by Union Oil Co. up to 25-25.9 degrees, at 65 cents; the Texas Co.'s schedule in Montebello and North Whittier, 14 to 21.9 degrees, 55 cents; 22-22.9 degrees, 57 cents; 23-23.9 degrees, 60 cents; 24-24.9 degrees, 62 cents; 25-25.9 degrees, 65 cents; 26-26.9 degrees, 68 cents.

Santa Paula—Union Oil Co., March 5, 14 to 19.9 degrees, 55 cents; 20-20.9 degrees, 56 cents, with 1 cent added for each degree upward to 25-25.9 degrees, at 61 cents, and then 2 cents added for each degree upward to 30-30.9 degrees, at 71 cents. The Texas Co. posts similar schedule in Santa Paula and Shields Canyon.

Lost Hills-Belridge—Met by Associated Oil Co. and Union Oil Co., with Union Oil Co. paying 44 cents for 11 to 13.9 degrees gravity.

Coalinga—Met by Union Oil Co. and Associated Oil Co.

Ventura Avenue—Associated Oil Co., March 5, 22-22.9 degrees, 58 cents, with 2 cents added for each degree up to and including 30-30.9 degrees at 74 cents.

Orcutt—Union Oil Co., effective March 5: From 16 to 19.9 degrees, 49 cents; 20-20.9 degrees, 52 cents; 21-21.9 degrees, 55 cents; 22-22.9 degrees, 57 cents; 23-23.9 degrees, 60 cents; 24-24.9 degrees, 63 cents; 25-25.9 degrees, 66 cents; 26-26.9 degrees, 68 cents.

Kettleman Hills—Effective March 5, Standard Oil Co., Union Oil Co. and Associated Oil Co.: 33 to 33.9 degrees, 66 cents, with 2 cents added for each degree upward to 39-39.9 degrees at 78 cents.

Newhall, McKittrick and Kern River—Standard Oil Co. of California, 55 cents for all grades, effective March 5.

PRICE CHANGES OF JUNE 26

Note—The Union Oil Co. met all Standard Oil Co. of California prices in fields where both companies purchase, and posted as follows in East Coyote: 14 to 15.9 degrees, 55 cents; 16-16.9, 57 cents; 17-17.9, 60 cents; 18-18.9, 62 cents; 19-19.9, 65 cents; 20-20.9, 68 cents; 21-21.9, 71 cents; 22-22.9, 74 cents; 23-23.9, 76 cents; 24 degrees and over, 79 cents. Santa Paula, 14 to 18.9 degrees, 55 cents; 19-19.9, 57 cents; 20-20.9, 60 cents; 21-21.9, 62 cents; 22-22.9, 65 cents; 23-23.9, 67 cents; 24-24.9, 70 cents; 25-25.9, 72 cents; 26-26.9, 75 cents; 27-27.9, 77 cents; 28-28.9, 80 cents; 29-29.9, 83 cents; 30 degrees and over, 85 cents. Orcutt, 16 to 18.9 degrees, 52 cents; 19-19.9, 54 cents; 20-20.9, 57 cents; 21-21.9, 61 cents; 22-22.9, 65 cents; 23-23.9, 69 cents; 24-24.9, 72 cents; 25-25.9, 76 cents; 26 degrees and over, 80 cents. Lost Hills and Belridge schedule same as that of the Standard Oil Co. of California in Lost Hills; Mount Poso, Kern River, McKittrick schedule same as Standard's Newhall, McKittrick and Kern River schedule except that Union Oil Co. posts 47 cents for 11 to 13.9 degrees, inclusive. Union Oil Co.'s schedule also posts 47 cents per barrel for 11 to 13.9 gravity in Coalinga, Midway-Sunset, Elk Hills and Buena Vista Hills. Shell Oil Co. and Associated Oil Co. met the Standard Oil Co. of California prices.

Kettleman Hills—33-33.9 degrees, 76 cents; 34-34.9, 78 cents; 35-35.9, 80 cents; 36-36.9, 82 cents; 37-37.9, 84 cents; 38-38.9, 86 cents; 39 degrees and over, 88 cents.

Newhall, McKittrick and Kern River—14 degrees to 19 degrees and over, 52 cents.

Surprising Amount of Pipe Line Construction

(Continued from Page 90)

the Hollow Pool, in Harvey County. The line was completed in March.

The Dickey Oil Co. constructed a new pipe line from its refinery at McPherson to the Ritz-Canton Field and to the Johnson and Mabee Pools, in McPherson County. This line was completed in April.

Pipe Lines in Michigan

Two leading pipe line developments during the first half of 1933 in Michigan provided a double outlet for crude produced in the new Porter Township Midland Pool.

The Pure Oil Pipe Line Co. first extended its gathering system from its Greendale tank farm to the Mattie Yost lease in Section 35, Greendale Township, a distance of 4 miles. Later a similar 6-inch line was laid, connecting the Porter Pool with the tank farm by way of the Yost lease, an additional 7 miles.

Booster stations give the line a capacity of 16,000 bbls. a day, or more than the present daily production of the entire Mount Pleasant Field.

The Simrall Pipe Line Corp., operated by the Roosevelt Refining Co., an independent plant in Mount Pleasant, also laid a 4-inch line from its Struble station in the East Pool, about 10 miles to the heart of the new Porter area.

In Rocky Mountain Area

There were no important oil pipe lines constructed in the Rocky Mountain area during the first half of 1933, but at the end of that period one new system was under way in Montana and several others were in prospect. The one new line was contracted late in June to serve the Cut Bank Field, in Glacier County, Montana, and is being built by the Santa Rita Oil & Gas Co. The contract was awarded to the Winston Brothers Construction Co. of Minneapolis. The line will be 15 miles long and consist of 4-inch pipe and will run from the Santa Rita's two wells in the Blackfeet Indian reservation to a point near the town of Cut Bank on the Great Northern railroad. The project includes gathering lines, a pump station and a telephone system and will cost between $80,000 and $90,000. It will be a common carrier. The Texas Co. also has under consideration a pipe line from Cut Bank to its International refinery at Sunburst, but at the end of the half year no announcement had been made as to whether it will be constructed this year.

Under date of February 28, 1933, Secretary of the Interior Wilbur issued an order requiring operators on Indian lands in the Maverick Springs Field in Fremont County, Wyoming, to begin marketing oil by September 1 from wells which have been shut in on penalty of having leases canceled. W. R. Weeks, Denver, and others applied for and were granted a permit by the Wyoming Public Service Commission to construct a 30-mile line from the field to Pavillion, where it was to connect with a proposed branch railroad from Shoshoni. The operators in the field protested the order and Secretary Ickes, after a hearing, entered an order in June modifying the former order so that operators could continue to shut in the field until prices and conditions warranted the marketing of the oil upon the payment of an additional $1 per year per acre rentals on the leases. This action is expected to delay, at least temporarily, the construction of the line.

Gas Line in Wyoming

The principal gas line construction in Wyoming during the first half of 1933 was in Carbon County, where the Rocky Mountain Gas Co., affiliated with the Ohio Oil Co., acquired the franchise and properties in Laramie of the Laramie Gas Co. and an old oil line of the Illinois Pipe Line Co. from the Rock Creek Field northwest of Laramie to that city and began supplying the city with natural gas from the Dutton Creek Field. Five miles of 6, 8 and 12½-inch pipe was laid to connect the main line with the city distribution system and a 4-mile connection between the distributing system and the old oil line in the Rock River Field were built. The distribution system was overhauled and converted for natural gas and the old oil line was repaired and put into condition. The total cost was approximately $670,000.

Standard Oil Co. of Louisiana extended its line into the Zwolle district of Sabine Parish to afford an outlet for the 200 to 300 bbls. daily production from the half dozen wells in the Converse area, a matter of 10 miles of 4-inch with incidental gathering system.

Crude Oil Producers and Number of Wells They Own in East Texas Fields

Following is a list of crude oil producers in the East Texas area. The figures and letters following the address refer to the number of wells owned and the location of the wells by county. For instance, "3 G," means three wells in Gregg County. The counties shown by letters are Gregg, Upshur, Smith, Rusk and Cherokee.

A

A.B.C.D. Syndicate, P.O. Box 661, Longview, 3 G.
Abercrombie & Harrison, 617 West Bldg., Houston, 10 R.
Abernathy & Ashton, Tyler, 1 G.
Abernathy & Kirkpatrick, Gladewater, 6 G.
Acme Oil Co., 306 N. Green St., Longview, 4 R, 1 G.
T. C. Adams, Bethany, La., 4 R.
Adams & Lyles, Lockhart, 8 G, 4 R.
Adams & Rowe, Inc., Shreveport, La., 1 R.
Ajo Oil Co. & McComas, 818 Merrin Bldg., Dallas, 2 G, 5 R.
Alco Royalty, Tulsa, Okla., 6 G.
H. L. Allen, 1003 Kirby Bldg., Dallas, 1 U.
Allen & Kilgore, Kirby Bldg., Dallas, 1 S.
Allen Oil Co., Kirby Bldg., Dallas, 1 R, 1 G.
Alexander & Rasmussen, 1221 Pierce St., Houston, 1 G.
Alma Pet. Corp., Tulsa, Okla., 7 G, 4 G & U, 6 U.
Almeda Oil Co., Luling, 2 G.
Amalgamated Oil Co., Magnolia Bldg., Dallas, 6 S.
Amada Oil Co., Republic Bank Bldg., Dallas, 7 G.
Amatex Pet. Co., 308 Citizens Bank Bldg., Tyler, 3 G.
Ambassador Oil Corp., 1905 W. T. Waggoner Bldg., Fort Worth, 1 R.
Amerada Petroleum Corp., W. T. Waggoner Bldg., Fort Worth, 59 G.
American Central Oil Co., W. T. Waggoner Bldg., Fort Worth, 1 U.
American Liberty Oil Co., 906 First Nat'l. Bank Bldg., Dallas, 72 R, 8 G.
Amos & Demayo, Route No. 2, Box 4, Kilgore, 1 R.
Geo. S. Anderson, Fort Worth Nat'l. Bank Bldg., Fort Worth, 4 R.
J. F. Anderson, 2 G.
Jos. Anderson et al, 417 Spring St., So. Tyler, 2 R, 2 G.
Anderson & Co., Fair Bldg., Fort Worth, 3 R.
Angle & Kuykendall, Box 947, Longview, 1 G.
W. H. Angle, Box 947, Longview, 2 G.
Ansley & Messingill, Longview, 3 G.
Arcadia Refg. Co., 320 Swann Bldg., Tyler, 4 G, 10 S, 4 U.
C. L. Archer, 219 Mockingbird Lane, Tyler, 2 R.
Arctic Oil Co., W. T. Waggoner Bldg., Fort Worth, 1 G.
Arkansas Drilling Co., 214 Forman Bldg., Longview, 1 G.
Arkansas Fuel Oil Co., Box 1734, Shreveport, La., 61 G, 19 R.
Arkansas Oil Co., 213 Exchange Bldg., El Dorado, Ark., 2 U.
Arkansas Prod. Co., 214 Forman Bldg., Longview, 4 G.
Arrow Oil & Gas Co., 1905 W. T. Waggoner Bldg., Fort Worth, 5 R.
Bert Aston, Franklin Bldg., Oklahoma City, Okla., 8 R.
Aston-Ellis Corp., Route No. 3, Overton, 1 R.
Atkinson & Sandifer Oil Corp., Breckenridge, 1 R.
Atlantic Oil Producing Co., Magnolia Bldg., Dallas, 339 G, 20 G-U, 15 R.
Atlantic & Pacific, Gladewater and Tyler, 1 G.

B

Babcock Oil Co., Denison, 1 R.
Bagby Lot, Tyler, 1 G.
G. T. Bagget, Tyler, 1 G.
Bailey & Trimble, El Dorado, Ark., 1 R, 2 G.
Baldwin & Sulton Oil Co., Walters, Okla., 1 G.
Ball Oil Corp., Henderson, 1 R.
Barkley & Lincoln, Ranger and Gladewater, 3 U.
Barkley & Meadows, City Nat'l. Bank Bldg., Wichita Falls, 12 G.
Barnsdall Oil Corp., Petroleum Bldg., Tulsa, Okla., 48 G, 3 R.
H. L. Barrett, Ponca City, Okla., 2 G.
Bass & Dillard, Wagner Bldg., Wichita Falls, 5 G.
F. A. Bates, Box 821, San Angelo, Shreveport, La., 4 G, 1 U.
R. P. Bates, 404 Springer Bldg., Tulsa, Okla., 1 G.
Bay Oil Corp., 1903 Exchange Bank Bldg., Tulsa, Okla., 15 G, 9 R.
B & B Oil Co. (C. H. Newman), Lawton, Okla., 1 G.
J. G. Beard, Oklahoma Nat'l. Bank Bldg., Duncan, Okla., 12 G, 1 S.
Beard & Hammond, Fort Worth Nat'l. Bank Bldg., Fort Worth, 7 R.
Bell & Grady, Inc., Dallas, 1 G.
Belrice Oil Co., 906 First Nat'l. Bank Bldg., Dallas, 4 R.
F. W. Bennett, Second Nat'l Bank Bldg., Houston, 2 G.
Jack J. Berry, 131 So. Beckham St., Tyler, 2 G.
I. N. Bettison, 1826 No. Sabinas St., San Antonio, 1 R.
N. Maxwell Betty, 1 R.
P. M. Biddison, Box 361, Overton, 3 R.
Big Indian Oil & Development Co., Huron Bldg., Kansas City, Kans., 8 R, 2 U.
Bill & Dave Oil Co., Shreveport, La., 2 R.
Bishop Corp., 315 Montgomery St., San Francisco, Calif., 5 G.
Harry Black, Peoria, Ill., 2 U.
Black, Collins & Stroube, Dallas, 3 G.
Black-Knight Co., Peoria, Ill., 2 G.
Black & Stroube, Tower Petroleum Bldg., Dallas, 2 R.
H. L. Blackstock, Petroleum Bldg., Oklahoma City, Okla., 3 R, 2 G.
Blackwell Oil & Gas Co., Cushing, Okla., 14 R.
Blalock Bros., Marshall, 2 G.
G. T. Blankenship Oil Co., Gladewater, 1 G.
Bloxom & Nash, Box 234, Henderson, 2 S.
Blue Ribbon Oil Co., 1 G.
Blue Star Oil Co., Dallas, 26 G.
Paul Bond, Rec., Longview, 2 G.
J. B. Bond, Rec., Box 365, Longview, 2 G.
Bond & Gillespie, Box 365, Longview, 1 G.
Bond & Johnson, Longview, 2 G.
Bond & Republic Prod. Co., Longview, 2 G.
Boonie Oil Co., Tyler, 1 R.
S. P. Borden, 721 Slattery Bldg., Shreveport, La., 2 R.
Boxtex Oil Corp., Johnstown, Pa., 2 G.
P. D. Bowlin, 319 First Nat'l. Bank Bldg., Henderson, 1 R.
Bowles Oil Co., Corsicana, 2 G.
Bowser & Beckett, 2118 Griffin St., Dallas, 2 R.
Brachman, R., Weatherford, 2 R.
W. W. Bradley, Box 227, Gladewater, 1 G.
Bradstreet & Jackson, Fort Worth, 1 R.
O. P. Breeding et al, Longview, 1 G.
M. Bridges, Box 696, Kilgore, 1 G.
Bridwell et al, 814 City Nat'l. Bank Bldg., Wichita Falls, 2 R.
Bridwell Oil Co. & Fikes, 814 City Nat'l. Bank Bldg., Wichita Falls, 3 G.
British American Oil Prod. Co., 13th Fl., Philcade Bldg., Tulsa, Okla., 3 G, 4 S.
J. H. Brogan, Tyler, 3 S.
Brothers Oil Co., Petroleum Bldg., Fort Worth, 1 R.
C. H. Brown, Box 1665, Longview, 1 U.
C. L. Brown, Orange, 1 U.
W. H. Brown, Longview, 3 G.
Brown Eagle Oil Co., Box 706, Gladewater, 5 G.
Brown & Travis, 1 G.
M. D. Bryant, 2 R.
R. B. Bryant, Box 5033, Dallas, 3 R.
D. M. Buffington, Ledger Bldg., Fort Worth, 1 G.
Bullard Oil Co., Oklahoma City, Okla., 1 R.
Ray Bumpas, 1 G.
C. B. Bunte, Houston, 2 S.
C. B. Bunte, Inc., Houston, 3 S.
Bunte & Droppleman, Wewoka, Okla., 2 S.
Burke Royalty Co., Box 755, Burkburnett, 5 G.
Joe H. Burkett, Overton, 1 R.
Burlingame, J. T., Box 967, Tyler, 2 G.
Burnett & Foshee, Gladewater, 1 G.
Burnett & Lee, Gladewater, 1 G.
Jas. N. Barnes, Box 1448, Longview, 1 G.
Burnham & Giles, Fort Worth, 1 R.
Burton Drilling Co., 1101 Kirby Bldg., Dallas, 7 R.
Butler-Calhoun, Overton, 1 R.
Butler, Calhoun & Boynton, Overton, 2 R.
E. O. Byers, Texarkana, 1 S.
B. G. Byers, 1 S.
Byrd-Frost, Inc., 1108 Tower Petroleum Bldg., Dallas, 22 G, 2 R.

C

California Pet. Co. of Venezuela, 1352 E. 42nd St., New York, N. Y., 18 G, 6 G & U, 22 U.
Cal-Consolidated Oil Co., San Antonio, 3 G.
Cal-Tex Corp., Kilgore, 4 G.
Cameron Oil Co., Tyler, 1 G.
Canadian Oil Co., Canadian, 6 G.
C. Cantwell, Rec., Longview, 1 G.
Caprock Oil Co., 1 G.
Cargile & Dudley, J. W. Harreld & J. F. Lucey, Rec., Longview, 5 G.
A. P. Carr, 1834 N. Argyle Ave., Hollywood, Calif., Gladewater, 3 G, 1 R.
B. F. Carrol, Peoples Nat'l. Bank, Tyler, 2 G.
Joe Carrol, 1 G.
Carrol & Blane, Box 751, Kilgore, 3 G.
Carrol & Taylor, Box 751, Kilgore, 1 G.
Thos. J. Carter, 707 Citizens Bank Bldg., Tyler, 2 G.
Cash & Coleman, Shawnee, Okla., 1 G.
W. R. Castle, Box 825, San Antonio, 1 G.
C & B Oil Co., 1 U.
Central Drilling Co., 514 Allen Bldg., Dallas, 2 G.
Central Commercial Oil Co., Tulsa, Okla., 5 G.
Central Oil Co., Box 266, Fort Worth, 2 R.
Champlin & Bass, Inc., Dallas, 8 R, 3 U, 12 G.
Chatham Oil Co., Tulsa, Okla., 3 U.
Cherokee Chief Oil Co., Gladewater, 6 G.
Chicago Oil Co., Dallas, 1 R.
Choctaw Oil Co., 206 Forman Bldg., Longview, 2 G.
E. Christian, Longview, 1 G.
Citizens Oil Co., Longview, 1 G.
F. C. Clark, Overton, 1 R.
J. W. Clark, Route No. 2, Longview, 1 U, 1 G.
R. L. Clark, Rec., Dallas, 1 R.
Clark & Cowden, Box 174, Duncan, Okla., 8 G, 5 U.
H. W. Clarkson, 309 So. Broadway, Tyler, 3 U.
Clopton & Lewis, Dallas, 1 G.
Jim Cloud, Thompson Bldg., Tulsa, Okla., 5 G.
Cloud & Manahan, Tulsa, Okla., 10 R, 3 G.
Cloverleaf Oil Co., Magnolia Bldg., Dallas, 2 R.
Coastal Drlg. Co., Inc., Smith-Young Tower, San Antonio, 2 G, 3 R.
D. Cockburn, Frederick, Okla., 1 R, 3 R & S.
C. Cockerham et al, Shreveport, La., 2 R.
Cockburn & Hooker, Gladewater, 1 S.
David Coffman, 1218 First Nat'l. Bldg., Dallas, 1 R.
A. Cohen, 322 Baltimore St., Baltimore, Md., 1 G.
J. M. Collins, Tr., 219 Ricou-Brewster Bldg., Shreveport, La., 2 G.
J. W. Collins, Luling, Tex., 2 G.
Collins, Gray & Wolf, Corsicana, Tex., 5 G.
Collins & Stroube, Corsicana, 6 R.
Colonial Oil Co., Fort Worth, Tex., 1 G.
Columbia Oil & Gas Co., Magnolia Bldg., Dallas, 26 G.
Combined Oil Interest, W. B. Powell, Receiver, Fort Worth, 12 R.
Combs, E. E., Box 151, Arp, 5 R.
Como Oil Corp., Henderson, 1 R.
Concord Oil Co., 1526 Allen Bldg., Dallas, 1 S.
Conico Oil Co., 1 G.
Conservative Oil Co., Tower Petroleum Bldg., Dallas, 5 R, 13 U.
Consolidated Oil & Primrose, Wichita Falls, 1 R.
Continental Oil Co., Ponca City, Okla., and Fort Worth, 11 G.
F. Coogan, Sayre, Okla., 1 R.
Cook Drilling Co., Fort Worth, 1 R.
E. C. Cooper, Overton, 1 R.
O. R. Cooper, 623 So. Kennedy St., Tyler, 1 R, 1 S.
Chas. M. Cope, Inc., 2213 Houston St., San Angelo, 1 G.
Corbin & Culf, Henderson, 1 R.
Corbin & McGaughy, care H. C. Culp, Henderson, 1 R.
Cordova Union Oil Co., Fort Worth, 9 R.
Corley & Blair, Longview, 3 G.
Cosby, Nelson & Kroll, Box 1837, Tulsa, Okla., 1 R.
Cox & Hamon, Box 276, Ardmore, Okla., 29 G.
C & P Oil Co., Box 1414, Wichita Falls, 12 R.
Crabtree, Foster & Jeffries, Tower Petroleum Bldg., Dallas, 3 R.
Cranfill & Reynolds, Esperson Bldg., Houston, 23 G, 7 U.
Crenshaw Oil Co., Wichita Falls, 2 U.
Crockett, J. B., care Elder Bros. Garage, Kilgore, 1 G.
Cron & Gracey, Houston, 2 S, 1 R.
Cullen Oil Co., Box 574, Henderson, 3 R.
H. C. Culp, 1108 So. Main, Henderson, 2 R.
C. C. Curtiss, Tyler, 1 R.

D

Danciger Oil & Refg. Co., W. T. Waggoner Bldg., Fort Worth, 6 G, 1 R.
M. E. Daniels, 3 R.
Daniels & Scott, 1 R.
Darby Petroleum Co., Thompson Bldg., Tulsa, Okla., 9 R, 10 G.
J. E. Devant, Corsicana, Tex., 2 G.
Kate W. Davis, 610 First Nat'l. Bank Bldg., Dallas, 2 G.
L. Davis, W. T. Waggoner Bldg., Fort Worth, 1 C.
Roy Davis et al, Box 1448, Longview, 1 G.
Davis, Henderson & Hamilton, Box 1448, Longview, 1 G.
C. K. Dawson, Ponca City, Okla., 1 G.
Roy Dawson, 2 G.
Day & Armstrong, Box 505, Gladewater.
Day & Co., Box 505, Gladewater, 1 G.
Day & Hancock, Gladewater, 2 G.
Dean & Adkisson, Inc., 1816 W. T. Waggoner Bldg., Fort Worth, 2 G, 3 U.
Deaner & Reynolds, Okmulgee, Okla., 2 S.
R. H. Dearing & Son, Tower Petroleum Bldg., Dallas, 2 G, 8 R.
Dearing & McBride, Southwest Life Bldg., Dallas, 4 G.
DeArmon Bros., Tyler, 4 R.
DeArmon Prod. Co., Peoples Bank Bldg., Tyler, 3 R.
Deep Rock Oil Co., Atlas Life Bldg., Tulsa, Okla., 17 R, 18 G.
Deep Sand Oil Co., Box 967, Gladewater, 1 G.
Degener & Co., Inc., Tyler 1 R.
W. A. Delaney Box 344, Longview, 3 G.
Delta Drilling Co., Box 965, Longview, 3 G.
DeMayo, Bessie, Longview, 3 G.
DeMontrand Oil Co., Tyler, 4 R.
DeMotte & Geisler, Box 601, Gladewater, 1 G.
Geo. T. Despot, Shreveport, La., 1 R.
Devonian Oil Co., Exchange Bank Bldg., Tulsa, Okla., 34 R, 7 G.
Devonian, Shell & Oliphant, 4 R.
Dillard Oil Co., Wichita Falls, 6 G.
Dillingham, O. D., Ranger, 2 G.
Dinham Oil Corp., Shreveport, La., 2 G.
Dink Oil Co., Atmore, Ala., 1 R.
W. E. Dixon, 1 G.
F. Dodson, 3615 Lexington St., Dallas, 2 G.
Dodwell et al, Box 533, Kilgore, 1 G.
Dolores Oil Co., Tyler, 2 G.
Donelly & Chastain, Tyler, 1 R.
D. Donoghue, Rec., Fort Worth Nat'l. Bank Bldg., Fort Worth, 8 R, 1 G.
D. Donghue, Rec., Fort Worth Nat'l. Bank Bldg., Fort Worth, 2 G, 7 R.
Paul Doran, Longview, and Capps Bldg., Fort Worth, 2 G.
Dorfman & Reynolds, Longview, 3 U.
Dorrough & Smith Oil Co., Marshall, 3 G.
Doty-McGee & Brown, Box 863, Longview, 1 G.
Droppleman Drlg. Co., Wewoka, Okla., 8 R, 2 G.
W. R. Duke et al, 1118 Fair Bldg., Fort Worth, 2 G.
Duncan & Holt, 1513½ Main St., Dallas, 5 R.
J. B. Dunigan, Breckenridge, 1 G.
D. D. D. Oil Co., 218 No. College St., Tyler, 1 G.
G. C. Dunn, Rec., 706 Central Bank Bldg., Dallas, 2 G.
W. H. Dunning, Jr., Fort Worth, 1 R.
C. Dunham, 433 Fleishel Ave., Tyler, 3 R.
Dutton & Hensley Oil Corp., 301 W. Front St., Tyler, 2 G.
Dyck Oil Co., Tulsa, 2 R, 9 G.

E

Earle et al, 1821 Eighth Ave., Fort Worth, 1 R.
East Mt. Prod. Co., Box 661, Longview, 2 U.
East Shore Oil Co., Box 373, Henderson, 4 S.
East Texas Oil Refg. Co., Tower Petroleum Bldg., Dallas, 43 R, 52 G.
G. W. Eaton, Henderson, 1 R.
Ebony Oil Co., Box 491, Henderson, 4 R.
Joe Edgar, St. Angelus Hotel, San Angelo, 1 G.
E. & D. O. Co., Inc., Shreveport, La., 6 U.
Edson Petroleum Co., Box 101, San Angelo, 1 G.
H. B. Edwards et al, Tyler, 1 R.
Edwards Drlg. Co., Houston, 2 G.
E. & F. O., 2 G.
Harry Elliott, Burkburnett Bldg., Fort Worth, 2 R, 7 G, 2 U.
Elsep Oil Co., 1 R.
V. H. Elzey, Dallas, 1 G.
Elzey & Constantine, Dallas, 1 R.
Empire Gas & Fuel Co., Bartlesville, Okla., 91 G, 6 R.
Enterprise Oil Corp., Seminole, Okla., 2 G.
Etnyre Pet. Co., Kirby Bldg., Dallas, 1 R.
Equity Oil Co., 806 Trinity Life Bldg., Fort Worth, 1 G.
Joe Estes, Dallas, 1 R.
Etex Oil Co., Dallas, 2 R.
W. L. Evans, Petroleum Bldg., Fort Worth, 1 G.
C. B. Everett, Gladewater, 1 G.
Everett Oil Co., Tulsa, 4 U.
Everett Drilling Co., Dallas, Tex., 21 R, 3 G.
Everett et al, Dallas, 4 G.

F

Fair & McGaha, Hamilton Bldg., Wichita Falls, 21 G.
Fair et al, Tyler, 2 R.
Fair, R. W., Oil Co., Box 107, Tyler, 5 R.
Fair & Thompson, Box 107, Tyler, 7 R, 4 G.
Faith Oil Corp., Box 1020, Wichita Falls, 13 G, 1 U.
Falcon Oil Co., Neil P. Anderson Bldg., Fort Worth, 15 R.
J. C. Falvey, Longview, 2 U, 1 G.
J. N. Farley, Longview, 5 U, 2 G.
Farlyn Oil Co., Humble Bldg., Houston, 4 G.
Feazel & Curtis, Tyler, 6 G.
Federated Oil Co., City Nat'l. Bank Bldg., Wichita Falls, 9 R.
J. R. Fenton, Route No. 2, Longview, 1 G.
F. H. E. Oil Co., Fort Worth, 32 G, 7 R.
Fifty-Five Oil Co., Box 287, Gladewater, 1 G.
Fine Oil Co., Box 793, Corsicana, 1 G.
Flanagan Prod. Co., Inc., Longview, 1 R, 2 G.
M. T. Flanagan, Longview, 2 G.
L. S. Flannery, Gladewater, 2 G.
Fleming & Kimbell, 1118 Fair Bldg., Fort Worth, 4 G.
Florence Oil Co., Tyler, 1 S, 5 R.
F. & N. Drilling Co., Longview, 4 G.
E. E. Fogleson, Athletic Club Bldg., Dallas, 1 G.
Ford & Sample, Overton, 2 R.
A. B. Foshee, Gladewater, 1 G.
Foster & Jefferies, Tower Pet. Bldg., Dallas, 1 R.
Foundation Oil Co., 2627 Terwilleger Blvd., Tulsa, Okla., 2 G.
Fox & Butler, Petroleum Bldg., Dallas, 3 R.
Friedman & Dorfman, Muskogee, Okla., 1 G, 1 R.
Friedman & Swindler, Muskogee, Okla., 2 R.
A. C. Fritz, et al, Route 2, Box 169, Gladewater, 2 G.
T. Fullwood, Corsicana, 1 R.
E. M. Fulton (Rec.), Longview, 1 G.

G

G. & A. Oil Co., Box 1325, Longview, 1 R.
Galvez Oil Corp., Mayo Bldg., Tulsa, Okla., 15 G, 5 U.
Gant, Garvin & Waggoner, Ardmore, Okla., 10 R.
Gant & Waggoner, Ardmore, Okla., 1 S.
J. M. Garrett, Longview, 1 R.
L. Garrison, Rec., Tyler, 4 R.
Gaskey, Henderson, 2 R.
M. E. Gaskell, Tulsa, Okla., 3 G.
S. A. Gaskell, Tulsa, Okla., 2 G.
Gynita Oil Co., First Nat'l. Bank Bldg., Dallas, 1 R.
H. E. Geisler, Gladewater 1 G.
E. H. Gibbs, 1 R.
Gibson, Johnson & Merrick, W. T. Waggoner Bldg., Fort Worth, 1 R.
Gibson Oil Corp., 309 Rule Bldg., Amarillo, 3 U.
Gilcrease Oil Co., Kennedy Bldg., Tulsa, Okla., 5 R, 9 G

S. L. Gillespie, Rec., Tradesmen's Bank Bldg., Oklahoma City, Okla., 2 G.
Gillum, et al, Overton, 2 R.
Glasscock, Longview, 5 G.
T. Glasscock, Longview, 4 G.
Ross Y. Glasscock, Longview, 2 G.
L. Godiln, Box 361, Tyler, 3 U.
Gold Star Oil Co., Box 252, Ardmore, Okla., 1 G.
Alex Goldsmith, 348 Harvey Snider Bldg., Wichita Falls, 1 G.
Goodgame & Eby, Overton, 1 R.
Goodnight Oil Co., Dallas, 5 R.
Goodwin et al, 1 G.
P. B. Goodwin, et al, Clyde Hall, Receiver, Longview, 2 G.
Robt. D. Gordon, 1009 Young St., Ranger, 1 R.
G. & R. Oil Co., San Antonio, 1 G.
Granite Oil Trust, Monrovia, Calif., 2 R.
T. S. Grayson, Trustee, Magnolia, Ark., 1 G.
Great Eastern Oil Co., 211 Construction Bldg., Dallas, 8 R.
Great Western Oil Co., 211 Swann Bldg., Tyler, 2 R.
Great Plains Oil Co., 106 Hurst Bldg., Longview, 4 R.
Greenwood Prod. Co., Esperson Bldg., Houston, 1 G.
George Greer, et al, City Bank Bldg., Shreveport, La., 1 R.
Gregg Holding Co., Box 770, Longview, 2 G.
Gregg Oil Co., Box 706, Longview, 7 G.
Grisham-Hunter, Box 1464, Abilene, 11 G.
Groneman & Doran, Capps Bld., Fort Worth, 4 G.
S. A. Guiberson, Jr., Box 1106, Dallas, 11 G.
Gulf Production Co., Gulf Bldg., Houston, 388 G, 265 R. 10 S.
Gulf State Development Co., Tyler, 1 S. 1 R.
George Guthrie, et al, San Antonio, 2 R.

H

R. Haddaway, et al, Flatiron Bldg., Fort Worth, 1 R.
Hammonds & Benson, Oklahoma City, Okla., 1 G.
M. E. Hale, Trustee, 1 R.
Hall & Lary, Box 1345, Longview, 1 G.
Hamill & Smith, 2nd Nat'l. Bank Bldg., Houston, 5 G.
Hamil, J. G., Rec., Fort Worth, 2 R.
W. B. Hamilton, Box 143, Bridgetown, 1 G.
Harry Hanburry, Pasadena, Calif., 7 G, 3 R.
Hankamer & Cochran, Sour Lake, 1 G.
Hankamer & Lee, Sour Lake, 1 G.
Harcher Oil Co., Box 1505, Kilgore, 2 G.
R. S. Harker, Gladewater, 1 G.
J. C. Harris, Rec., Gladewater, 1 G.
J. T. Harris, Gladewater, 1 R, 1 G.
L. M. Harris, Tulsa, Okla., 1 G.
M. Harris, 508 Marvin Bldg., Dallas, 1 G.
Hastings & Dodson, Kilgore, 2 R, 1 G.
Hastings, et al, Box 124, Kilgore, 1 G.
U. R. Hatcher, Box 1505, Kilgore, 1 G.
Hawkeye Pet. Co., Box 1328, Longview, 9 G, 1 U.
J. C. Hawkins, Tyler, 1 G.
J. M. Haynes, Jr., Tyler, 1 G.
Haynes Drilling Co., Inc., Slattery Bldg., Shreveport, La., 15 R.
H. B. W. Oil Co., c/o Broughton Wilkinson, Tyler, 4 G. 2 R.
Hedrick-Camp Drlg. Co., Republic Bank Bldg., Dallas, 1 G, 2 U.
Heep Oil Co., Esperson Bldg., Houston, 2 R.
Henderson & Holden, Orpheum Bldg., Wichita, Kans., 1 R
Hendrick Ranch Royalty Co., Longview, 2 G.
B. W. Henke, 2 G.
Henry Oil Corp., Luling, 3 G.
Hensley & Dutton, 1 G.
Henson-Fair, 2 R.
Henson Odel, Commerce Bldg., Okmulgee, Okla., 3 R.
Heyser & Heard, Kirby Bldg., Dallas, 7 G.
Heyser-Heard-Sweell, 1 G.
O. L. Hickman, Dallas, 3 R, 3 G.
Hill and Hill, Petroleum Bldg., Fort Worth, 1 G.
Hinchliff, Mexia, 2 R.
Hindman, et al, Alamo Nat'l. Bank Bldg., San Antonio, 1 G.
W. B. Hinton, Box 15, Lockhart, 8 S.
M. O. Hobbs, Box 833, Gladewater, 1 G.
M. E. Hodges, Box 1294, Kilgore, 1 G.
P. L. Hoffman, et al, Cisco, 6 G, 1 R.
W. C. Holcomb, 1 G.
H. H. Holden, 403 W. Elm, Tyler, 2 G.
Frank Holliday, Rec., 2 G, 1 R.
W. F. Hallifield, Henderson, 3 R.
John W. Hoosier, Dallas, 15 R.
Horseshoe Syndicate, Dallas, 2 R.
H. Houghton, W. M. Preston, Receiver, Dallas, 1 R.
Houston Oil Co., Petroleum Bldg., Houston, 32 R, 21 G.
Houston Prod. Co., Petroleum Bldg., Houston, 4 R.
Howard Pet. Co., 424 So. Cheyenne, Tulsa, Okla., 9 G.
W. B. Howe, Rec., 5 G.
Roy E. Howell, Box 318, Overton, 1 R.
James B. Hughes, Eddy Bldg., Bloomington, Ill., 2 G.
Hughes & Foley, 4 G.
Humble Oil & Ref. Co., Humble Bldg., Houston, 222 G. 743 R, 7 G, 91 U.
T. D. Humphries, 243 Harvey-Snider Bldg., Wichita Falls, 10 G.
W. G. Humphries, 3615 Lexington St., Dallas, 1 G.
E. S. Hunt, et al, Tyler, 1 G.
S. Hunt & Landrum, Tyler, 1 R.
Sherman Hunt, Box 938, Tyler, 2 R.
Hunt Production Co., Box 938, Tyler, 134 R, 16 S, 3 G.
Hunter & Rowe, Wichita Falls, 5 G, 2 R.
J. C. Hurley, 2 G.
F. P. Hynes, et al, Box 1013, San Antonio, 2 G.

I

Idaho Oil Co., Tyler, 3 G.
Imperator Oil Co. (J. C. Stone & Son), Tower Petroleum Bldg., Dallas, 6 G.
Imperial Petroleum Co., First Nat'l. Bank Bldg., Dallas. 3 G.
Indian Oil Syndicate, Henderson, 2 R.
Inland Oil Co., 1112 Mercantile Bldg., Dallas, 4 G.
International Oil Co. of Texas, Arp, 2 R.
Invincible Oil Co., Los Angeles, Calif., 10 G.
Iotex Oil Co., Winterset, Iowa, 3 R, 1 G.
Iowa Payne Oil Co., Tyler, 9 G, 1 R, 3 S.
Iron Rock Oil Co., Gladewater, 1 G.
B. K. Isaacs, Trustee, Waggoner Bldg., Fort Worth, 6 G.
Island Oil Co., Houston, 6 G, 1 R, 3 U.
Island Oil Co., Houston, 4 G.

J

Jenkins Oil Corp., Republic Bank Bldg., Dallas, 11 R.
J. & J. Petroleum Co., Texarkana, 1 G.
J. O. Oil Co., Box 770, Tyler, 1 G.
Johnson & Burnham, Neil P. Anderson Bldg., Fort Worth, 2 G.
C. M. Johnson, Trustee, Arp, 3 R.
H. L. Johnson, 1 G.
J. E. Johnson & W. B. Pearce, 2758 College, Shreveport, La., 1 G.
T. A. Johnson & Owens, Tr., Box 770, Tyler, 6 G.
F. B. Jackson, 1821 Ninth St., Wichita Falls, 3 R.
Mrs. M. W. Jackson, Overton, 1 R.
Jackson & Bradstreet, Fort Worth, 1 G.
Jackson, Wise & Markham, Sapulpa, Okla., 3 R.
Jackson, Wise & Sneeden, Sapulpa, Okla., 4 G, 9 R.
W. R. Jarrett, 1619 Petroleum Bldg., Oklahoma City, Okla., 1 G.
Jay Kay Oil Co., Box 469, Little Rock, Ark., 2 U.
Jenkins Oil Corp. & Hamilton, Republic Bank Bldg., Dallas, 4 R.
T. A. Johnson, Box 770, Tyler, 4 S, 1 R.
F. A. Johnson, Tr., Tyler, 1 R.
F. A. Johnson, Tr. (S. Maccus), Tyler, 1 R, 1 G.
F. A. Johnson (Tr.), R. Carter, Tyler, 2 S.
Johnston & Rogers, Box 1162, Oklahoma City, Okla., 4 R.
Johnson, Wyche & Yarbrough, Longview, 1 G.
E. M. Jones, Frost Nat'l. Bank Bldg., San Antonio, 2 G.
E. M. Jones & Houston Oil Co., Houston, 14 R.
Jones Bros., E. W., & F. D., Tower Petroleum Bldg., Dallas, 3 R.
Jones, et al, & Houston Oil Co., Houston, Tex., 4 R.
W. R. Jones, & H. A., Union Nat'l. Bank Bldg., Wichita, Kans., 5 U.
Jones, Doss, et al, Liberty Nat'l. Bank Bldg., Oklahoma City, Okla., 10 G.
Jones & O'Brien, Inc., Box 1152, Shreveport, La., 22 G.
Jones & Oliver, 3 G.

K

Karona Oil Co., Corpus Christi, 2 R.
Kathleen Oil Co., McAlester, Okla., 3 G.
Katter & Manziel, Box 733, Gladewater, 1 G.
G. O. Kelly & Shoveline Oil Co., Mount Pleasant and Overton, 2 R.
Kenwood Oil Co., McAlester, Okla., 4 R.
E. E. Kerr, 2025 Albans Rd., Houston, 1 R.
L. B. Ketch, Oklahoma City, Okla., 1 S.
Kewanee Oil & Gas Co., Titusville, Pa., 17 G.
Hobert Key, Kilgore, 1 G.
H. P. Key, et al, Box 443, Kilgore, 2 G.
Kidney & Lester, 3453 Stanford Ave., Dallas, 1 G.
Kilgore & Hanson, Longview, 2 G.
Kilgore Refg. Co., Overton, 1 G.
Killam & Gibbs, 1 R.
S. H. Killingsworth, 4 G.
Kimball & Baldwin, Wichita Falls, 1 G.
Kimbrell & Acre, Wichita Falls, 2 R.
A. D. King, Tr., Ricou-Brewster Bldg., Shreveport, La., 3 G.
C. King & Dyck Oil Co., Wichita Falls, 2 R.
F. King, Box 1294, Kilgore, 4 R.
King & Massengill, Box 1235, Wichita Falls, 3 G.
Kingwood Oil Co., Okmulgee, Okla., 1 G.
Kinnebrew & Simpson, Shreveport, La., 2 G.
Kirby Petroleum Co., Kirby Bldg., Houston, 15 R.
Charles J. Kleiner, Cisco, 1 R, 3 U.
Kniverton Oil Co., 2 G.
W. C. Knox, Kilgore, 2 G.
Koberg, et al, Oklahoma City, Okla., 1 G.
Koberg Oil Co., Oklahoma City, Okla., 3 G.
C. F. Kolp, Electra, 4 R.
K. O. T. Oil Co., Arp, 7 S.
K. & P. Oil Co., Tyler, 5 R.

L

Lacey Petroleum Co., Longview, 3 G.
R. Lacey, Longview, 6 G.
Roger Lacy (Dale Sneed), Longview, 1 G.
S. S. Laird, Kilgore, 4 R.
Lambert & Haynes, 2 G.
Lander, A. N., Kilgore, 1 G.
Sid Latham (Rec.), 3 G.
Wayne S. Lawrence, Longview, 1 R.
Lechner & Hubbard, Dallas, 7 G.
Lee & Lee, Box 315, Gladewater.
T. N. Lee, Gladewater, 1 G.
T. W. & S. A. Lee, Gladewater, 2 G.
Lee & Hankamer, Gladewater, 1 G.
Lee & Phillips, Gladewater, 3 G.
H. H. LeMaster, Tyler, 1 S.
Leonard Petroleum Co., Washington, Pa., 6 R, 3 G.
Lester & Duffield, Dallas, 7 U, 8 G.
Lewis Pet. Co., & Selby Oil Co., Tulsa, Okla., and Dallas. 14 R.
S. Lewis & Suni, Oklahoma City, Okla., 1 S.
S. Lewis & Fee, Oklahoma City, Okla., 2 S.
Lewis & Breeden, Oklahoma City, Okla., 1 S.
Lide & Rowe, Inc., Giddens-Lane Bldg., Shreveport, La., 4 R.
Lide Taylor Oil Co., Giddens-Lane Bldg., Shreveport, La., 4 R.
J. Lieber, Tr., Zeppa, Jr., 2 G.
J. T. Life, 1 G.
Lion Oil & Refg. Co., Exchange Bldg., El Dorado, Ark., 22 R, 5 G.
R. C. Lipscomb, Tyler, 1 R.
T. C. Little, Longview, 3 G.
Little Caesar Oil Co., Longview, 1 R.
Lively & Bryan (J. C. Hamil, Rec.), Fort Worth, 2 R.
D. A. Lloyd, Franklin E. Wolfe, Rec., Fort Worth, 1 R.
Lockhart, Gladewater, 1 G.
Londo Oil Co., Tyler, 3 R.
London Petroleum Co., Tyler, 1 G, 1 S, 4 R.
Lone Pine Oil Co., Ontario, Canada, 3 R.
Lone Star Oil Co., Dallas, 1 G.
F. M. Long, Henderson, 2 S.
Joe Long (J. C. Robbins), Cushing, Okla., 1 U.
Louisiana Oil & Refg. Co., Ardis Bldg., Shreveport, La., 6 G, 14 R.
J. E. Lucas, Kilgore, 1 S.
Lucas & Hobbs, Tyler, 2 S.
F. Lacey (Rec.), Longview, 4 G.
Lucey Pet. Co., Tower Petroleum Bldg., Dallas, 22 G, 10 R.
Lucky Strike Royalty Co., Tyler, 1 G.
Luling Oil & Gas Co., Central Trust Bldg., San Antonio, 9 R.
Lutcher Oil Co., Shreveport, La., 1 R.
J. W. Luttes, 402 Franklin Bldg., Oklahoma City, Okla., 2 G.
C. H. Lyons, Shreveport, La., 6 R, 4 G.

Mc

T. P. McAdams (Rec.), 1 G.
L. C. McBride, Dallas, 1 G, 1 R.
J. A. McCartney (Indian Oil Syndicate), Box 451, San Angelo, 1 R.
W. M. McConnell (Sam Key), Tyler, 1 G.
A. McClelland (Rec.), 1 U.
McCullough Oil Co., Tyler, 2 S, 3 G.
McCullough & Zilky, Tyler, 1 G.
Alex McCutcheon, Arp, 6 S, 1 R.
McCutcheon & Sessions, 2 S.
McDaniel & Plummer, Gulf Bldg., Houston, 1 R.
C. C. McDonald (Rec.), 1 R.
McDonald & Campbell, Amer. Exch. Nat'l. Bank Bldg., Dallas, 4 G.
McDonald & Smith, Box 87, Electra, 1 R.
H. W. McGee, Dallas, 3 G.
J. B. McIntire (Trustee), Tyler and Kilgore, 1 R.
McLemore & Reagan, 1 G.
McLester Oil Co., Eastland, 1 R.
McMahon, Moore & McCullough, 6 S.
Charles McMahon, Tulsa, Okla., 10 R, 2 G.
C. L. McMahon, et al, Tulsa, Okla., 1 G.
McMahon & British Am., Tulsa, Okla., 4 R.
McMillan, Gordon (Agent), Tyler, 2 G.
Gordon McMillan (Trustee), Tyler, 2 R.
McMillan Pet. Corp. & McMurray, Tyler, 3 G.
Jim McMurray, Judia Bldg., Cisco, 4 G.
McMurray Bros., Arp, 5 R.
M. H. McMurray, Arp, 5 R.
R. J. McMurray (Rec.), Arp, 3 R.
R. J. McMurray (Trustee), Arp, 2 S.
J. J. McRoberts, Henderson, 1 R.
J. J. McRoberts (Reilly & McR.), Henderson, 2 R.
M. H. McVey, 1 G.
W. M. McVey, 1 G.
McVey & Aldhal (Mary Sterens), 1 G.
McMurray & Fair, Tyler, 3 R.
McWhorter, 2 G.

M

Mabee Consolidated Corp., Exchange Bank Bldg., Tulsa, Okla., 12 R, 8 G, 4 U-G.
E. B. Madden, Olney, 1 R.
Maddox Dev. Co., Pittsburg, 1 U.
Magnolia Pet. Co., Magnolia Bldg., Dallas, 51 U, 292 G, 89 R, 20 S, 7 G-R, 9 G-U.
C. L. Mahoney, Dallas, 1 G.
Mahoney Pet. Co., Dallas, 1 G.
Manahan Oil & Gas Co., Tulsa, Okla. (Kilgore), 6 R, 1 S.
Malernee, et al, Oklahoma City, Okla., 4 R.
Manson Oil Co., Chickasha, Okla., 3 G, 5 U.
Bobby Manziel, Gladewater, 4 G, 1 U.
Joe Manziel, Gladewater, 2 G.
Marfinwood Oil Co., Corsicana, 1 G.
Margay Oil Co., Roberts Bldg., Tulsa, Okla., 8 G, 6 U.
Marine Corp., Central Bank Bldg., Dallas, 5 R, 2 G.
Marine Prod. Corp., 9 G.
Markham & Dunning, Fort Worth, 4 R.
Mar La Foy Oil Co., Tyler, 2 G.
Marlin Oil Syndicate, Longview, 1 G.
Marr Drilling Co., Tyler, 2 R.
Roy L. Martin, Tyler, 1 G.
F. W. Martin & Co., Exchange Bldg., Tulsa, Okla., 2 G.
Martin & Cockburn, Overton, 4 R.
Martin & Sladik, Tyler, 2 R.
J. H. Massie, Staley Bldg., Wichita Falls, 9 G.
J. H. Massie et al, Staley Bldg., Wichita Falls, 6 G.
Otto Massie, 2 G.
Massie & McMimm, 1 G.
W. H. Matthews, Orpheum Bldg., Wichita, Kans., 2 G.
Mazda Oil Co., Commercial Bldg., Tulsa, Okla., 8 G.
Mead Bros., Atlas Life Bldg., Tulsa, Okla., 2 U.
Mead Oil Co., Tulsa, Okla., 4 G.
J. C. Means, Jr., 5 G.
Meebane Oil Co., 1 R.
J. W. Meeker (rec.), 1 R.
J. G. Menke, 1 R.
Mercury Pet. Corp., Fort Worth, 2 G.
Meridian Pet. Corp. of Texas, Tulsa, Okla., 6 G.
Merren & Mays, Shreveport, La., 4 G.
Merrick et al, Ardmore, Okla., 5 R.
F. W. Merrick, Inc., Ardmore, Okla., 8 G.
Merry Bros. & Perini, Inc., San Angelo, 1 G, 3 R.
Metcalf et al, 1 R.
Midas Oil Co., Dallas, 6 G, 2 U.
Midfield Oil Co., 2 G.
Mid-Kansas Oil & Gas Co., Findlay, Ohio, and Tulsa, Okla., 253 R, 27 S, 9 C.
Mid-Texas Prod. Co., Breckenridge, 1 C.
E. L. Miller et al, 1 G.
Paul L. Miller, Kilgore, 2 G.
Miller-Lacy Oil Co., Shreveport, La., 1 G.
Minnesota-East Texas Oil Co., Duluth, Minn., 1 G.
Mission Oil Co. Land Bank Bldg., Kansas City, Mo., 7 G.
G. P. Mitcham, Dallas, 5 U, 3 G.
C. B. Mitchell, Fort Worth, 1 R.
Molly Oil Co., 1 G.
Robt. S. Monroe, Jr., Tyler, 3 S.
Mook-Texas Oil Co., Fort Worth, 3 G.
B. W. Moore, 818 Citizens Bank Bldg., Tyler, 1 G.
E. H. Moore, Tulsa, Okla., 3 R.
E. J. Moran, Dallas, 2 G.
J. J. Moran, Staley Bldg., Wichita Falls, Tex., 1 G.
P. M. Morgan (Rec.), 1 R.
A. D. Morton et al, Exchange Bank Bldg., Tulsa, Okla., 1 G.
H. S. Moss, First Nat'l. Bank Bldg., Dallas, 9 G.
Moss & Urshell, First Nat'l. Bank Bldg., Dallas, 9 R.
Mudge Oil Co., Branch 609 Sycamore St., Duncan, Okla., 2 U, 16 G.
Mullendore, Berry & Berry, Cleveland, Okla., 7 G.
L. R. Munger, 5 R, 7 G.
M. J. Munn, 2 R, 6 G.
Munn, Skelly & Buford, 2 G.
J. B. Murphy, Sapulpa, Okla., 1 G.
O. G. Murphy (Trustee), El Dorado, Ark., 6 G.
J. C. Murphy, 1 R.
Murphy et al, 3 U.
Murphy & Lanier, Marshall, 1 G.
C. H. Murray, 1 G.
Murray Oil Co., Overton, 2 R.
Murray & Goode, Overton, 5 R.

N

Nash & Strickland, Henderson, 3 G., 2 S.
Nathan Oil Co., 1 R.
National Oil & Grease Co., Dallas, 3 G, 2 R.
National Oil Co., San Antonio, 1 G.
National Securities Co., Dallas, 3 G.
Navarro Oil Co., Humble Bldg., Houston, 16 R, 16 G.
Nelson & Decker, 1 U.
New Process Producing Co., Dallas, 4 G.
R. M. Nichols, 1 G.
Nivola Oil Co., Tyler, 2 R.
North Star Oil Co., Tower Petroleum Bldg., Dallas, 1 R.

O

O'Brien Oil Co., 3 G.
O'Connell Oil Co., Boston, Mass., 1 G.
John F. O'Connell, 1 G.
Octagon Oil Co., Tulsa, Okla., and Kilgore, 4 G.
T. L. Odom, Tyler, 1 R.
R. Ogden, 511 W. Seventh St., Austin, 2 R.
J. J. O'Hearn, 1030 W. Mistletoe, San Antonio, 3 R.
Oils, Inc., Tradesmen's Nat'l. Bank Bldg., Oklahoma City, Okla., 2 G.
Oils Properties Corp., Houston, 1 R.
J. N. Oksenholt Co., 3 R.
J. E. Oliver, 1 R.
Olsen Bros., Henderson, 12 R.
Olvey & Sample, El Dorado, Ark., 5 R, 1 G.
Omega Oil Co., Longview, 2 G.
I. P. O'Neill, Tyler, 2 R.
John O'Neill, Staley Bldg., Wichita Falls, 2 G.
John T. O'Neill, 2 G.
Edna G. Onyeatt, 1 G.
Oriental Oil Co., 1911½ Pacific St., Dallas, 2 G.
Ortiz Oil Co., Wichita Falls, 17 R, 2 G.
O. W. R. Oil Co., Dallas, 4 G.
Overton Refining Co., Inc., Overton, 3 R.

P

Geo. Pace et al, Republic Bank Bldg., Dallas, 1 R.
Glenn A. Pace, 1 R.
H. A. Pace, 1 R.
Pace Petroleum Co., Oklahoma City, Okla., 2 S, 2 G.
Panhandle Ref. Co., Wichita Falls, Tex., 1 R.
Pansy Oil Co., Tyler, 5 R.
Patrick Prod. Co., 304 Central Bank Bldg., Dallas, 1 G.
Patterson Drilling Co., Dallas, 3 R.
T. G. Patton, Blackstone Hotel, Tyler, 1 R.
J. B. Patty, 1 G.
E. A. Payne, 1 G, 1 R.
Pearce & Moon, Kilgore, 1 R, 2 G.
V. J. Pearson, Longview, 3 G.
Peckham et al, City Bank Bldg., Wichita Falls, 5 U, 10 G.
Pederson & Merrett, 3 G.
Pelican Nat'l Gas Co., Commercial Bank Bldg., Shreveport, La., 7 G.
Pelphery Bros. & Hobson 2 G.
Penn Oil Co., Dallas, 2 R.
Perkins & Hines, Wichita Falls, 1 G.
R. W. Perkins, Marshall, 2 G.
O. J. Perrin & Fell, Dallas, 2 G, 7 U.
E. F. Perry, 1 G, 1 S, 1 R.
J. P. Perry et al, 1 R.
Perry, Wood & Boller, 5 R.
Petroleum Finance Co., Dallas, 13 G.
Petroleum Marketing Co., Houston, 9 R.
Peyton Bros., Mexia, 3 G.
Phillips & Bennett, Mexia, 1 R.
Phillips et al, Gladewater, 6 G, 3 U.
Loyce Phillips, Rec., 1 G.
Philmack Oil Co., Tyler, 2 R.
C. D. Pierce, Trustee, 1 S.
Pilot Oil Co., 724 Fidelity Union Bank Bldg., Dallas, 23 G. 7 R.
Pine Grove Oil Co., Houston, 3 S.
Pine Lodge Oil Co., Houston, 1 U.
Geo. D. Pipes, 2 R.
Pitkin & Goldston Oil Co., Houston, 3 G.
Pitzer, West & Wood, Breckenridge, 1 R.
Pitzer & West, Breckenridge, 2 S.
Albert Plummer, Houston, 4 G.
Pointer Oil Co., Inc., Waco, 2 S.
Porter & Baggett, Longview, 1 G.
Powell & Irion, Inc., Gladewater, 3 G.
Premier Oil Corp., Tyler, 2 G.
L. G. Priest, 1905 Fifth Ave., Fort Worth, 4 R.
Prince Bros. Drilling Co., Electra, 6 G.
J. C. Prince, Jackson, Miss., 2 R.
L. H. Pritchard, Oklahoma City, Okla., 1 R.
P. G. Prod. Co., 1 G.
Producers, Inc., 7 G.
Professional Oil Co., Waco, 2 S.
Nelson Pruitt, Box 114, Waxahatchie, 2 S.
Pugh-Hickman Drilling Co., Inc., Shreveport, La., 8 S.
Pyramid Pet. Corp., Dallas, 2 R.

Q

Quad Oil Co., Dallas, 8 G.

R

Raddatz, E. J., Longview, 6 G.
Rajo Oil Corp., Fort Worth, 9 G, 1 R.
Rancho Oil Co., Sinclair Bldg., Fort Worth, 5 G, 15 U.
W. S. Randall, Tyler, 1 R, 1 G.
M. W. Ransom, Trustee, Shreveport, La., 1 R.
Ray & Miller, Longview, 3 G.
Geo. B. Ray, Tyler, 10 R.
J. G. Reeves, 222¼ N. Broadway, Tyler, 2 G.
Hill Read, 2 R.
Rector & Davidson, Corsicana, 1 R.
Red Grave & Fagan, 1 G.
Red Star Oil Co., McAlester, Okla., 10 G.
Redic & Rugus Oil Co., Tyler, 2 G.
S. Reele (Rec.), 1205 Mercantile Bldg., Dallas, 1 R.
Reese & Wright, 1 G.
J. C. Reese, 1 G.
Refugio Oil Co., Houston, 2 G.
Refugio Oil and J. Z. Werby, 3 U.
Regent Oil Co., Dallas, 3 R, 1 G.
Reilly Oil & Royalty Co., San Antonio, 5 G.
Reilly, Trapshooter, San Antonio, 3 R.
Reinhardt & Bates, 1 G.
A. D. Repp, 1 G.
Republic Production Co., Houston, 4 R, 4 G.
Reserve Petroleum Co., Tulsa, Okla., 11 G.
Retsal Drilling Co., Henderson, 3 R.
J. D. Reynolds et al & Conner, Camden, Ark., 1 U, 1 G.
Roy A. Reynolds, Fort Worth, 6 G, 1 U, 3 R.
W. F. Reynolds, Tr., 3 R.
Reynolds & Kimberlin, 1 G.
Rhoades Drilling Co., Inc., Trinity Life Bldg., Fort Worth, 34 G, 2 R.
Rice Drilling Co., 1603 Slattery Bldg., Shreveport, La., 2 C.
Richardson, Tyler, 1 R.
Rife Construction Co., 2 R.
Rimmer, Lutters & Hamilton, Longview, 1 G.
Rio Oil Co., Fort Worth, Tex., 6 U.
M. Risinger, 1 R.
Roane Petroleum Co., Dallas, 2 G.
J. W. Robbins, Trustee, Longview, 4 R.
D. C. Roberts, Henderson, 3 R.
Roberts Oil Co., 1 R.
Roberts Oil Corp., Breckenridge, 1 R, 1 S.
J. I. Roberts Prod. Co., Longview, 1 G, 3 U.
L. E. Roberts, Henderson, 3 R.
M. E. Roberts, 1 R.
Roberts & Roscoe, Henderson, 1 R.
Robertson Drilling Co., Fort Worth Nat'l. Bank Bldg., Fort Worth, 1 R.
A. D. Robinson, Dallas, 5 G.
R. C. Rochelle et al, Dallas, 1 G.
Rochester-Haddaway, 2 G.
Rockwood Oil Co., McAlester, Okla., 1 G.
Rocky Mountain Oil Co., Box 863, Longview, 2 S.
Roeser & Pendleton, Inc., Fort Worth Club Bldg., Fort Worth, Tex., 36 G, 1 U.
D. D. Rogers, Dallas, 1 R.
G. B. Rogers, Rec., Waco.
B. H. Rogers, Oklahoma City, Okla., 2 R.
Yandell Rogers, Tyler, 4 R.
Rogers Bros., 1 R.
Rogers & Rogers (or Champlin & Bass), Dallas, 5 U.
Root & Rhodes, Eastland, 2 G.
Root & Mahon, 1 G.
A. E. Roscoe, Marshall, 1 R.
Rowan & Bristow, 4 G.
Rowan & Hope, San Antonio, 1 G.
Rowan & Nichols, Inc., Trinity Life Bldg., Fort Worth, 4 G.
Max Ruben, 3217 Main St., Dallas, 1 R.
Ruben & Boren, 2 R.
Ruben & Nadel, 2 R.
Ruben & Wiseman, 2 R.
Frank Russell, 1 R.
Russ Petroleum Corp., Dallas, 8 G.
Ruston Drilling Co., Ruston, La., 11 G.
J. S. Rushing, 3 G, 2 R.

S

Sabine Syndicate, Longview, 3 R.
Sabinas Oil Corp., Longview, 2 G, 11 U, 3 G-U.
Sakaba Oil Corp., Inc., Shreveport, La., 3 G.
Salmon Oil Co., Dallas, 3 G.
Salome-Cooper Drilling Co., 6 U.
H. G. Samson, Sinclair Bldg., Fort Worth, 4 R.
Sanard Oil Co., Swann Bldg., Tyler, 1 G.
J. Curtis Sanford, 1 R.
J. L. Sarver, Tyler, 1 G.
Satelite Oil Co., Tulsa, Okla., 2 G.
Saturn Oil Co. 1 U.
Sayre Oil Co., Glencoe, Ill., 4 R.
T. S. Schroeder, Dallas, 3 G, 1 R.
Scott & Lipscomb, 1 G.
Sea Gull Oil Corp., Tyler, 1 R.
Seigler & McCall, 4 G.
Selby Oil & Gas Co., Kennedy Bldg., Tulsa, Okla., 15 G.
Snavely Heris and Amy Miller, 32 G.
Sells Petroleum Co., Inc., Longview, 10 G.
Sentinel Oil Corp. (E. Tex. Loan & Inv. Co.), Dallas, 1 S.
Service Drilling & Royalty Corp., 3 U.
W. L. and T. L. Session, Dallas, 3 S.
J. W. Sewell, 1 S.
Shano Oil Co., Longview, 4 U, 6 G.
Shasta Oil Co., Longview, 5 R, 9 G.
W. M. Shaw, 1 R.
Shaw Oil Co. (Union Oil Co.), Dallas, 3 R.
Sam P. Shelburn, 5 G.
Shell Petroleum Co., Tulsa, Okla., and Houston, 275 G, 44 R, 15 U, 3 G-U.
Carl Sheldon, Electra, 1 G.
Shilo Oil Co., Dallas, 1 G.
Shore Line Oil Co., Overton, 2 R.
Showalter & Russell, Longview, 1 G.
Showers & Moncrief, Inc., Houston, 8 G.
W. M. Shriver & Johnson, Longview, 2 U.
Harry Shulman, Box 1058, Breckenridge, 1 G.
Louis Sikes, Tyler, 2 U, 8 G.
Silver Star Oil Co., McAlester, Okla., 7 G.
R. E. L. Silvey, Overton, 2 R.
D. J. Simmons (Jackson & Jackson), Fort Worth, 1 G.
Jay Simmons, Dallas, 2 G.
Simms Oil Co., Magnolia Bldg., Dallas, 36 U, 15 G.
Simms Oil Co. and Leon Russ, Dallas, 12 U.
Simplex Oil Co., Shreveport, La., 3 G.
Sinclair-Prairie Oil Co., Tulsa, Okla., and Fort Worth. 242 G, 123 R, 119 S.
J. L. Skaggs, 1 G.
Skipper-Bivins Oil Co., Inc., Longview, 2 G.
B. A. Skipper Prod. Co., Longview, 11 G.
Skipper Oil Co., Longview, 1 G.
A. L. Slaughter (receiver), Dallas, 1 S, 2 G.
C. F. Smith, Longview, 2 G.
E. L. Smith Oil Co., Mexia, 15 G, 2 R, 1 G-U.
E. R. Smith (receiver), 1 R.
Glenn J. Smith, Thompson Bldg., Tulsa, Okla., 1 G.
H. R. Smith, Inc., Luling, 13 G.
H. T. Smith & Sons 1 S.
J. R. Smith, Longview, 3 G.
James T. Smith, Tyler, 1 G, 2 R.
J. W. Smith (receiver), Electric Bldg., Houston, 1 S.
J. O. Smith et al, 1242 Pacific Mutual Bldg., Los Angeles, Calif., 2 R.
R. E. Smith, Jr., 3124 Albans, Houston, 1 G.
R. E. Smith, (receiver), Tyler, 1 G.
Smith-Bohlesson Oil Co., Houston, 2 R.
Smith Oil & Gas Co., Longview, 3 S, 1 G.
Smith, Guerin & King, Tyler, 4 S.
Smith & Strouss, Dallas, 1 G.
Smith & Torrance, 5044 Bonner St., Tyler, 4 R.
Sneed Bros. and Y Oil Co., Tulsa, Okla., 2 G.
Sneed-Dale, 2 G.
J. B. Sneed, 1 S.
Snowden & McSweeney, Sinclair Bldg., Fort Worth, 12 R, 2 G-U.
B. L. Snyder, 4308 Edmondson Ave., Dallas, 1 R.
W. O. Snyder, Box 7027, Tyler, 1 G.
Marcus Snyder (T. A. Johnson, Trustee), 1 R.
Snyder & Ashton, 1 G.
Son Bar Corp., El Dorado, Ark., 6 R.
Son Ron Oil Co., Fair Bldg., Fort Worth, 3 R.
Sorrels & Owens, Gilmer, 1 U.
V. Sorrel (Pilot), 1 G.
Southern Interstate, Henderson, 3 R.
Southern Prod. Co., Minneapolis, Minn., 2 R.
Southern Oil Ref. Co., Box 967, Tyler, 2 R.
Southport Pet. Co., Longview, 2 G.
Sovereign Oil Corp., 609 S. Grand Ave., Los Angeles, Calif., 1 G, 1 R.
J. B. Sowell, 2 G.
M. Spalding, 1 G.
Spindsco Oil & Royalty Co., Dallas, 7 R, 1 C.
H. K. Spear, Kilgore, 1 G.
F. D. Spratt, et al, Gladewater, 1 G.
J. E. Stack, 1 G.
Staley Bros., Staley Bldg., Wichita Falls, Tex., 1 G.
Staley-Wynne Oil Corp., Wichita Falls, 1 G, 1 R.
Standard Oil of Kansas, Houston, 6 G, 8 R, 5 S.
Standard Pipe & Supply Co., Dallas, 4 R.
Standtex Pet. Co., Oklahoma City, Okla., 2 R.
Stanolind Oil & Gas Co., Fort Worth, 138 R, 87 G, 16 U, 13 G-U, 7 G-R.
C. R. Starnes et al, Gladewater, 2 G.
W. L. Starnes, 1 R.
Star Petroleum Co., 1131 Rives-Strong Bldg., Los Angeles, Calif., 3 G.
State Prod. Co., Eastland, 1 R.
Cecil Story (receiver), 1 G.
Strickland & Mullins, Henderson, Tex., 1 R.
Stroube & Stroube, Corsicana, 13 G, 8 R, 5 U.
Steen Drilling Co., Tyler, 7 G, 3 G-U.
H. Stein, Overton, 1 R.
W. E. Stewart, 1 R.
J. M. Stevens (receiver), (now Midfield Oil Co.), 2 R.
Stewart & Duffy, Overton, 1 R.
Stewart Holdings, Inc., Tyler, 3 S.
Stidham & Thrasher, Tyler, 1 R.
R. J. St. Germaine, Wright Bldg., Tulsa, Okla., 2 G.
Stoddard & DeLaney, Dallas, 4 G, 3 R.
Stodel Oil Co., Dallas, 3 G.
Jerome Stone, Hamilton Bldg., Wichita Falls, 1 R.
Stone & Imperator Oil Co., Dallas, 1 R.
Fred Stovall, Trustee, 1 G.
S. & D. Oil Co., 2 R.
S. & W. Oil Co., Dallas, 2 R.
Sullivan & Burch, Overton, 1 R.
M. Joe Sullivan, Kansas City, Mo., 1 R.
Summit Drilling Co., Tulsa, Okla., 9 S.
Sun Oil Co., Dallas, 177 G, 53 S, 43 R, 22 U, 14 R-S, 10 G, 8 G-U.
Sunbeam Oil Co., Oklahoma City, Okla., 2 R.
Superior Oil Co., Dallas, 35 G.
Sutton & Hawkins, Tyler, 2 S, 5 G.
Swain & Holcomb, 1 G.

T

C. P. Talbot, Shreveport, La., 1 R.
A. H. Tarver, Shreveport, La., 1 G.
Terver, Randall & Delaney, 2 U.
Tatum, Oliver & Spradin, Dallas, 2 R.
Taubert & McKee, Tyler, 2 R, 1 S.
Taxman Refining Co., Wichita Falls, 1 U.
R. L. Tennant (receiver), 2 R.
Texarkana Oil Co., Arp, 6 R.
Texon Oil & Royalty Co., Fort Worth, 1 G.
Tex-Jersey Oil Corp., Tyler, 7 R.
Texas State Oil Co., 703 Browder St., Dallas, 4 R.
Texas Trading Co., Tyler, 3 R.
Texas Unity Oil Co., Houston, 1 G.
Tex Lloyd, Fort Worth, 1 R.
Texnia Oil Co., Wichita Falls, 3 U.
Texota Oil Corp., El Dorado, Ark., 2 G.
Texas Co., Houston, 100 G, 71 R, 26 S, 8 C, 3 U.
Sam Thomas, Trustee, Marshall, 2 G.
Thomas & Sedberry, 2 G.
E. Thomasson, San Antonio, 1 S, 1 R.
Thomasson & Fitzsimmons, Shreveport, La., 1 R.
F. L. Thompson, 2 R.
Mrs. E. Thompson, 4 G.
Thompson & Bean, Groesbeck, 1 R.
Tide Water Oil Co., Tulsa, Okla., 200 G, 115 R, 7 G-R.
Tidal Oil Co., Box 965, Longview, 2 G.
M. K. Towns, Luling, 3 G.
Transtate Oil Co., 2602 Esperson Bldg., Houston, 6 G.
M. E. Trapp, Oklahoma City, Okla., 2 G.
Travis & Wair, 1 U-G.
Trico Oil Co., Dallas, 3 U, 5 R.
Chas. Triger (receiver), Abernathy, Longview, 1 G.
C. L. Tubbs, Box 282, Arp, 1 C.
W. B. Tucker, Dallas, 4 R.
Tucker & Killough, 1 G.
W. G. Tunstill et al, Petroleum Bldg., Fort Worth, 1 R.
Turman Oil Co., Tulsa, Okla., 32 R.
W. C. Turnbow (Trustee), 108 Hurst Bldg., Longview, 1 R, 10 G.
W. F. Turner, Ardmore, Okla., 6 G.
Turner & Gandy, Iowa Park, 1 G.
Twin Oil Co., Gladewater, 6 U-G, 2 U.
Tysco Oil Co. (Yeager-Henry-Etex L. & I. Co.), Dallas, 2 R, 3 G.

U

Union Oil Co., Union Oil Bldg., Los Angeles, Calif., 6 R.
Universal Oil & Gas Co., Shreveport, La., 2 G, 1 R.
Upchurch & Co., Tyler, 2 R.
Uscan Oil Co., Oklahoma City, Okla., 1 G, 3 R.
Utex Oil Co., Salt Lake City, Utah, 3 G.

V

Ed Valentine, Kilgore, 1 G.
G. H. Vaughn et al, Dallas, 14 R.
Venable & McClanahan, 16 R.
Ventura Oil Co., Wichita Falls, 1 R.
J. C. Vernon, Gladewater, 1 G.
R. W. Vierson, 5 G.
Sam K. Vierson, Okmulgee, Okla., 6 R.
Vireca Oil Corp, Houston, 1 G.
Virginia Oil & Royalty Co., Fort Worth, 3 G.
R. H. Vise, Dennison, 2 G, 2 U, 1 R.
Mrs. R. H. Vise, 3 G.

W

Waggoner & McConnell (agent), 1 G, 3 U.
Wainwright-West Oils, Ltd., Henderson, 2 R, 2 G.
E. L. Walker, Mrs., Gladewater, 1 G.
F. Walker, 1 R.
R. Y. Walker, 1 G.
W. D. Walton et al, Pettus, 3 R.
Walton & Tuberville, Henderson, 1 R.
Ward Oil Corp., Ardmore, 39 R.
Washington Oil Co., 323 Fourth Ave., Pittsburgh, Pa., 4 G.
Weaver-Crim Corp., Eastland and Kilgore, 5 R, 14 G, 4 S.
S. P. Weaver, 4 S.
Webster Oil & Gas Co., Box 920, Tyler, 2 G.
F. W. Weeks et al, Tyler, 3 R.
H. M. Welch, 610 Kirby Bldg., Dallas, 1 R.
Welch-Sandler Oil Co., Kansas City, Mo., 4 G.
Welch-Sandler & Demayo, 1311 E. 19th St., Kansas City, Mo., 2 G.
WoMac Pet. Co., Tyler and Wichita Falls, 1 R.
Wells & Gann, Tyler, 7 G.
L. H. Wentz, Ponca City, Okla., 2 G.
J. G. Werby, Longview, 2 G, 1 U.
C. K. West, Breckenridge, 4 S.
West Florida Oil Co., Atmore, Ala., 1 R.
Western States Royalty Co., Chicago, Ill., 3 G.
Western States Oil & Ref. Co., Fort Worth, 2 R.
Westheimer & Daube, Ardmore, Okla., 9 R.
Westline Oil Co., Tyler, 3 R.
Whale Oil Corp., Corsicana, 2 G.
W. W. Wheeler et al, Wirt M. Marres, receiver, Fort Worth, 2 U.
J. S. Wheelis, Jr., San Antonio, 6 S.
Wheelock & Collins, 1st Natl. Bank Bldg., Corsicana, 6 G, 13 R.
J. O. Whittington, Longview, 11 G.
Whitley Purchasing Co., 2 R.
C. L. Wickliffe, Longview, 1 U.
P. N. Wiggins, Jr., Magnolia Bldg., Dallas, 2 G.
Wilcox Oil & Gas Co., Tulsa, 1 G.
Wilder & Howse, Tyler, 2 R.
Carl G. Wilie, Overton, 3 R.
P. A. Wilkerson, 2 R.
Willard Oil Co., Cleburne, 3 R.
Douglas Williams, Dallas, 1 G.
H. E. Williams, 2 G.
Wilson & Wimberly, 1 G.
Wilford Co., Inc., Shreveport, La., 1 S.
Wilson & Broach, Beaumont, 2 R.
Wimmer & Landers, 1 G.
Winona Oil Co., Winona, Minn., 1 G.
Winston Oil Co., McAlester, Okla., 7 G.
Wise & Jackson, Sapulpa, Okla., 1 G.
Nat Wiseman et al, Tyler, 2 R.
Nat Wiseman, Tyler, 2 R.
Witherspoon Oil Co., San Antonio, 3 R, 1 S.
K. W. P. Witt, Overton, 1 R.
Wofford Oil Co., Birmingham, Ala., 7 R.
R. A. Wolfe, Houston, 3 G.
Clint Wood Drilling Co., Inc., Breckenridge, 4 R.
Clint Wood, 3 G.
J. A. Wood and Salome & Cooper, Wichita, Kans., 10 U-G.
Fox Wood, Oklahoma City, Okla., 2 G, 1 U.
Woodley Petroleum Co., Shreveport, La., 3 G.
Wooley Pet. Co., 3 G, 13 R.
H. E. Wren, 1 G.
Wright-Smith Oil Co., Ardmore, Okla., 2 G.
R. E. Wyche, Jr., Shreveport, La., 1 R.

Y

Young Bros. & Alexander, Inc., Fort Worth Natl. Bank Bldg., Fort Worth, 1 U.
Yount Lee, Oil Co., Beaumont, 184 G.

Z

Zenith Oil Co., Ltd., 435 Subway Terminal Bldg., Los Angeles, Calif., 2 G.
Zion Oil Co., 1323 Union Ave., Kansas City, Mo., and Dallas, 3 S.

Stationary-Spindle Design for Oilbath Geared Powers Suitable for East Texas Conditions

By KENTON CHICKERING
Oil Well Supply Co., Dallas, Tex.

With fully enclosed, heavy-duty, geared type powers rapidly growing in popularity in several Mid-Continent oil fields, it is interesting to note the development of the stationary-spindle design used in the construction of the first heavy-duty, oilbath, double-reduction geared power. Although the latest power of this design is rated for nearly twice the capacity of the original stationary-spindle type oilbath geared power, it is of the same general construction and has been thoroughly field proven.

More than two years ago the first heavy-duty, oilbath, double-reduction geared power for pumping a group of deep wells was designed and built by the Oil Well Supply Co.

The stationary-spindle type power differs from other types in that the spindle is an integral part of the base. The main gear and the eccentrics or crank, as the case may be, revolve as a unit around the stationary spindle. This has several advantages that are interesting and worthy of mention here.

The radial load from the main gear and crank (or eccentrics) is supported by the base through the spindle which is an integral part of it. Both the upper and lower radial thrust bearings are mounted on the stationary spindle. This feature eliminates the necessity of a radial bearing.

Especially Desirable Construction

The stationary-spindle design affords positive alignment of the bearings and gears. The spindle is an integral part of the base and can not get out of alignment. The bearings are definitely located on the spindle. This construction is especially desirable when dismantling and reassembling a power in the field. All parts are easily removed and replaced without the least danger of misalignment.

The stationary-spindle design permits of the distribution of the maximum tooth wear over several areas on the low-speed gear. The crank (or eccentrics) is held to the main gear by several large bolts and is driven by large radial keys placed on a wide radius. The position of the crank (or eccentrics) on the main gear can be changed to distribute the maximum gear wear resulting from high peak loads over several areas of the low-speed gear train. The use of large radial keys eliminates danger of loose shaft keys.

One of the most desirable features made possible by the stationary-spindle design is compactness and the overall height is reduced to a minimum, and the pull rod connections are close to the foundation.

The reduced height of the full rod connections cuts down the installation costs. It is not necessary to set one of these powers in a deep pit, and less concrete is required in the foundation because the reduced height lessens the tendency to turn the unit over.

To make oilbath geared powers as compact as possible, the Oil Well Supply Co. has combined the use of fully heat-treated, forged steel gears with the stationary-spindle design. Gears of this type have a greater capacity per inch of face width and it is possible to use narrower gears. The narrower gears further reduce the height of the powers and make them more compact.

Eccentric and Crank Type Powers

Both eccentric type and crank type powers of the stationary-spindle design are manufactured by the Oil Well Supply Co. The different service requirements for oilbath geared powers in various fields make it desirable to build units of both types.

The crank type lends itself to all-roller-bearing construction and is particularly suitable for pumping a moderate number of deep wells. In order to make the crank type adaptable to various well conditions, this manufacturer has perfected and regularly furnishes the dual-stroke type single crank. It is a cast steel crank with two crank pin holes. The crank pin is placed in one hole for a stroke of a certain length and in the other for a different stroke length.

The eccentric type, which can be provided with one or two eccentrics, is best suited for pumping a larger number of relatively shallow wells. Eccentrics are furnished to provide the stroke lengths specified by operators. The use of two eccentrics makes it possible to connect a very large number of wells and also facilitates proper balancing of well loads.

The two sizes of crank type oilbath geared powers now manufactured by the Oil Well Supply Co. are especially well suited to the requirements of the East Texas Field. The smaller of the two, the Imperial No. 80-SC, is an all-roller-bearing, single crank (dual-stroke) power recommended for the same horsepower input capacity as the Imperial No. 80 (eccentric type), the original heavy-duty oilbath, double-reduction geared power. The larger unit, the Imperial No. 150-SC, is an all-roller-bearing, single crank (dual-stroke) power for greater capacities.

The low-speed gears of the Imperial No. 80-SC (also the Imperial No. 80) have an industrial rating of 230 horsepower at 20 r.p.m. as calculated by the Lewis formula. In spite of this high industrial rating, the manufacturer very conservatively places the recommended horsepower input capacity for continuous oil field service at 80 horsepower at 20 s.p.m., or 115 horsepower at 30 s.p.m. in order to allow an ample factor of safety. It is customary in the East Texas Field to drive this power with a 100-horsepower gas or oil engine through a V-belt drive and a long high-speed shaft extension. It can be driven by an 80-horsepower electric motor, and the overall reduction of 27.7 to 1 has proven very satisfactory for service with various drives.

Based on an overall efficiency of 60 per cent from the prime mover to and including the working barrels, the No. 80-SC power will lift 1,800 bbls. of fluid per 24 hours from a 3,500-foot level when operating at 20 s.p.m.

Large Factor of Safety

The low-speed gears of the Imperial No. 150-SC have an industrial rating of 510 horsepower at 20 s.p.m. as calculated by the Lewis formula. The manufacturer rates this power for continuous oil field service at 150 horsepower input capacity at 20 s.p.m. thus assuring a large factor of safety. This unit is ordinarily driven by a 150 or 160-horsepower oil or gas engine through a V-belt drive and long high-speed shaft extension. It can be used with a 150-horsepower electric motor, and the overall reduction of 21.6 to 1 makes it suitable for various drives.

Assuming an overall efficiency of 60 per cent from the prime mover to and including the working barrels, the No. 150-SC power will lift 3,500 bbls. of fluid per 24-hour day from a level of 3,500 feet at 20 s.p.m.

Both of these new powers are equipped with dual-stroke cranks for 30-inch and 36-inch stroke lengths. The lubrication systems are foolproof. A positive splash system, in which no oil pump is required, furnishes ample lubrication to all gears and most of the bearings. The upper spindle bearing and the crank pin bearings are grease packed. The grease is retained by self-adjusting leather seal rings.

The pull rod discs used on both the No. 80-SC and the No. 150-SC powers have 16 clevis holes for pull rod connections. Each hole is equipped with a replaceable, hardened steel bushing so that no wear takes place on the disc. The clevis pins are drilled for alemite lubrication. The crank pin of each power is provided with two heavy-duty Timken bearings on which the disc is mounted.

Texas Revenues Grow With Drive Against Bootlegging

AUSTIN, Tex., July 24.—Comptroller George H. Sheppard's drive on gasoline bootleggers is bringing the State $4,000,000 a year of new revenue, half of it from the East Texas oil field region alone, according to a statement by W. O. Huggins, president of the Texas Good Roads Association.

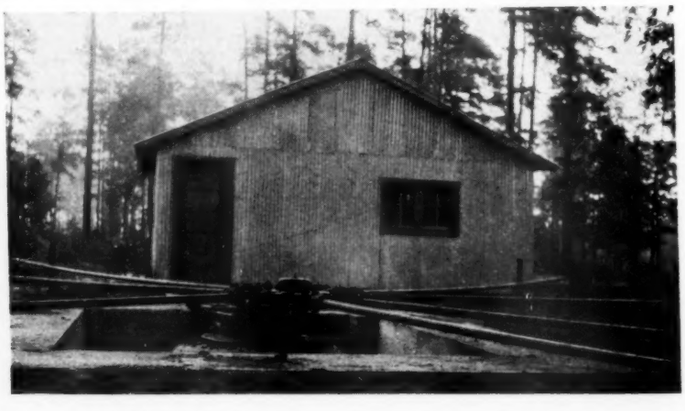
That means, Mr. Huggins pointed out, $1,000,000 for the school fund, $1,000,000 for the highway bond assumption fund, and $2,000,000 for highway construction. The Texas Good Roads Association is cooperating in the drive to stop evasion in the payment of the gasoline tax.

By comparison, Mr. Huggins showed this new $2,000,000 in gasoline taxes in the East Texas area is greater than revenues of either the cigaret tax, all poll taxes, or all occupation and gross receipt taxes, or all inheritance taxes for last year. He pointed out that numerous indictments have been returned in South Texas against gasoline dealers charged with selling blended motor fuels. The prosecutions are under the new Metcalf-Harman gasoline tax administration law passed last spring. The charges were based on mixing low-grade tax-free fluids with gasoline.

WILLIAM H. H. MONROE DEAD

OIL CITY, Pa., July 24.—Funeral services for William Henry Harrison Monroe, 93, one of the best known oil men in western Pennsylvania, were conducted Friday, July 21. Mr. Monroe died in his home in Shamburg, near here, July 18. He came to Oil City in 1865 and followed the oil business his entire life, working in the Pithole and Petroleum Center areas during their heyday. He leaves three sons and one daughter, Charles C. Monroe of Corry, Pa.; Victor G. and Isaac E. Monroe of Pleasantville, Pa., and Miss Clara Monroe, at home. He also leaves 17 grandchildren and 3 great grandchildren and a sister, Mrs. Nina Oviatt, of Hudson, Ohio.

Central power on Martin lease of Phillips Petroleum Co., Borger, Texas



Seven well Oil Well Supply Co. geared power installed at Spear lease, Pelican Natural Gas Co., Kilgore, Texas

President's Edict Regarding Hot Oil Shipments Brings About Great Change in East Texas

By L. E. BREDBERG

DALLAS, Tex., July 24.—A great change has come over the East Texas situation. Five days in the field, watching loading racks, refineries and tank trucks and checking up on pipe line and tank car shipments show that violators, be they producers or transporters of hot oil, have had a change of heart since the President published his edict on July 11 in regard to production and shipments of illegally produced oil. The psychology of his action may have been sufficient to bring about a difference in conditions, but there no doubt are few operators and transporters who feel like taking issue with the President and his forces. However, a test case is expected to be brought against the Government in the near future.

Most of "hot oil" was being moved out by tank cars from the field, with two pipe lines considered as large transporters of such oil.

From 100,000 bbls. by tank cars per day to 232 bbls. on July 19 is a considerable drop. On July 20 there were only two cars sent out under tender, and no cars are leaving without proper tender now. The railroads refuse to transport any oil without proper tender. A member of the commission stated that there were 460 loaded oil cars on Gladewater sidings, the railroad refusing to move the oil and the owners of it willing to take any price to get it off their hands. Demurrage will eat it up if the State does not confiscate it. What the railroad will do with it after demurrage eats it up is not known, but it is used for fuel oil.

To "Dry Up Hot Oil"

J. Howard Marshall, one of the legal advisors sent to the field by Secretary of the Interior Ickes, said: "We are here to dry up hot oil and had orders to not come back to Washington until that is done." This sounds as though the Government means business, and the operators feel that it does. Several Federal operatives had been working in the field for some time, unknown to others, digging up facts and making investigations for reports to be made when A. D. Ryan, chief investigator, arrived on July 18.

A late report stated that there were 13 local refineries shut down in the field. If others continue to operate on crude produced illegally they too will probably be put on the "shutdown" list within the next week or two. Failing to pay state and Federal taxes is expected to shut down more of them.

There have been 238 lawsuits filed against violators by the attorney general's department. These suits no doubt will be scrutinized by the Federal men in the field, and given the backing of the higher government.

The new allowable in the field is 573,272 bbls. and daily production is now being held to around this figure. This is an innovation in the field where previously many operators and transporters of illegal crude paid little attention to the railroad commission's orders. The commission lacked power and a sufficient penalty to discourage violators, but with the Federal Government to back it up all operators now give due consideration to the commission.

While the railroad commission was sitting in its offices at Kilgore operators or their field men went in to ascertain just what their allowables should be from their wells. Before this some of them did not seem to care what their allowables were for they did not expect to abide by the commission's orders. One company's foreman was in the office to learn how to make an EN form so as to make proper tender of his oil to a railroad for shipment. His company had previously transported plenty of oil without making proper tender but now it realizes that it is wise to do as ordered by the State's oil and gas regulatory body.

Can Watch Overproduction

The railroad commission's field men can now divert their entire attention to overproduction and intrastate shipments of crude, and refinery activities in the field, the interstate shipment of crude investigations being taken off their shoulders by the Federal operatives. The drying up of overproduced oil and preventing it from reaching refineries will be the principal work of the commission's men. If this can be done then proration in East Texas will have reached the point for which it has been striving since April of 1931.

Runs to local refineries are expected to fall around 45,000 bbls. per day during the present week, and runs by major lines from the field no doubt will show a drop.

A close check is to be made on interstate shipments of refined products.

With violators mending their ways and less crude being produced legally, purchasers, large and small, will be seeking more connections to fill their contracts or meet their demand. A movement has been started to bring down the daily allowable in the field but at present it looks as if all purchasers desired more oil and more connections, and such a move is regarded as premature. However, there are large stocks on hand and with the peak of consumption soon passing with the season, purchasers will be loaded up with connections and storage oil.

The attorney general's department, working in conjunction with the Railroad Commission, has been holding two criminal investigation courts each week to check up on overproduction. Reports are brought in by the operators, run tickets and division orders are submitted, and royalty and landowners have been cooperating with the court in an effort to prosecute violations. Some cases have shown that operators did not make royalty payments for all the oil produced, and that the land and royalty owners have suffered because of the producers holding out such payments.

Checkup of Water Wells

A checkup of water wells in the field shows a total of 370 salt water wells and 10 making fresh water on account of casing leaks. There are 53 new water wells on this report.

There are 340 wells which are pumping or require agitation to make them kick off to flow their daily allowable. Thirty-one others are dead and may be equipped with pumping equipment in order to make their allowables.

Salt water encroachment, from the west side, has bitten deep into the Gladewater, Overton and London areas due to the fact that these areas have been heavily drilled. Drilling has not been so careful with the result that many of the wells have been drilled into the water strata or so near that water has soon come in. Heavy withdrawals in these areas are also responsible for the water movement to the east.

Companies continue to rig up their wells with pumping equipment. They will continue to prepare their leases for pumping regardless of whether or not such equipment is needed now or in the future. One superintendent stated that his company would put in 100 individual units and 22 powers, and other field men stated that their companies intended going ahead with preparing their leases for the time when pumping equipment was needed. They realize that if they wait until winter or spring they cannot economically or easily equip their leases, and that it is more economical to go ahead with this work at the present time when high waters and impassable roads will not delay such work.

One company is installing 18x22 gas engines of 225 horsepower, 200 r.p.m. to drive a 200 k.v.a. generator which will supply sufficient "juice" to pump 15 wells on its lease. Small units will be rigged up on each individual well connected to a high line run over the lease. The same installation is being made on another lease which has 14 wells. Lufkin No. 5½ units will be used on each well. Two wells will be pulled from a back side crank until water becomes too heavy at which time more units can be easily rigged up on the wells.

Rod pulling equipment will be used on all wells except two which are in the river bottoms, and 15/35 oil well motors with hoist equipment will be used on these wells.

Sore Spot Investigated

One of the "sore spots" in the field, producing around 9,000 bbls. per day, of so salled salvage or seepage oil, has been recently checked by the Railroad Commission, even though a Federal injunction exists to prevent the commission from interfering with this production.

Field men of the commission found what they consider the well that has caused all the trouble in this shallow production area, or the well that has been used as a subterfuge. Another string of casing has been run in the well to prevent the oil from seeping up from the Woodbine sand into the Carrizo water sand to where the shallow wells were drilled and from where the oil was supposed to have been coming. Men of the commission allege that oil has been taken from the regular Woodbine sand wells in the area, by use of bypass or direct connections between the deep and shallow wells. Production from these wells is said to be around 400 bbls. per day since a complete investigation was made of the area, and since the casing was run in the one deep well.

Plans have been announced for a quarter of a million dollar casinghead gasoline plant in the north end of the field, Gregg County. Capacity of the plant will be about 24,000 gallons per day. It will be on the W. R. Hughes farm. The Gregg-Tex Gasoline Corp. was formed to lay plans and erect this plant which will serve a part of the field in which there is no other such plant at the present time. The Arkansas Fuel Oil Co. has the nearest plant to the proposed location of the new company. Another plant is located on the west side of the county at Gladewater and Humble Oil & Refining Co. has one in the south end of the county near Kilgore.

Wildcatting

Ed Bateman Drilling Co.'s No. 1 A. C. Carlisle in the Mary Elam Survey, Leon County, is coring at 5,380 feet believed to be in the Eagleford. This is the most interesting test in the county at the present time, Shell Petroleum Corp. and others' No. 1 Beggs in the John Carter Survey having been held up by a fishing job.

Four wildcat locations were staked in the district with two tests abandoned. Wiggins and Champlin's No. 1 fee in the Nacogdoches University Lands was given up as a dry hole at 4,867 feet.

Peden & Olsen have made location for No. 2 Brannon, 600 feet south of their

East Central Texas Wildcats

Week Ending July 24

FRANKLIN COUNTY

Company, well, farm name, section and block—	Remarks
Van Emon et al's No. 1 O. S. Maxton, 910 varas W and 910 varas S of NE cor. of survey, John Brown Sur.	Derrick blew down.
FREESTONE COUNTY	
Devonian Oil Co.'s No. 1 J. G. Beall, 330 ft. out of SE cor. of 220-ac. tract, 2 miles SW of Donie, Isaac Connelly Sur.	Coring 4,900 ft.
GREGG COUNTY	
Adams and Lyles' No. 5 L. Howard, 1,400 ft. from N line and 2,320 ft. from W line of survey, Mary Scott Sur.	Drlg. 3,065 ft.
Almeda Oil Co.'s No. 3 R. P. Doby, 737 ft. from W line and 910 ft. from S line of survey, M. Irwin Sur.	Derrick.
Atlantic Oil Producing Co.'s No. 7 W. Smith, 150 ft. from W line and midway between Nos. 1 and 6, J. S. Carrithers Sur.	Bldg. derrick.
Badgett et al's No. 1 A. A. King, 2,200 ft. from S line and 395 ft. from W line of survey, M. Tennyson Sur.	Rig up.
Bristow & Wynn's No. 6 Moore, 389 ft. from S line and 75 ft. from W line of lease, D. Moore Sur.	Rig up.
Canadian Oil Co.'s No. 3 Whittaker, 147 ft. W and 73 ft. S of original SE cor. of Shell Petroleum's Jones lease, C. Alexander Sur.	Derrick.
C. & G. Oil Co., Inc.'s No. 2 Hoyt, 290 ft. from N line and 535 ft. from E line of lease, J. Mosley Sur.	Rig up.
East Texas Refining Co.'s No. 5 R. R. Collins, 3,480 ft. from N line and 5,290 ft. from W line of survey, D. Sanches Sur.	Derrick.
East Texas Refining Co.'s No. 4 T. W. Tuttle, 5,060 ft. from N line and 6,900 ft. from W line of survey, W. H. Castleberry Sur.	Rig up.
East Texas Refining Co.'s No. 6 T. W. Tuttle, 5,050 ft. from N line and 6,900 ft. from W line of survey, W. H. Castleberry Sur.	Waiting on cmt. to set; T.D. 3,558 ft.
East Texas Refining Co.'s No. 2 D. G. Sparks, 75 ft. S and 200 ft. E of most northerly NW cor. of survey	S.D. 3,495 ft.
East Texas Refining Co.'s No. 6 Doby, N offset to Stanolind's No. 5 Meadows, M. Mann Sur.	Set surface csg.

(Continued on Page 102)

No. 1 John Goodman, which made a small producer opening up the Nacatoch sand producing area just north of the Van Field in Van Zandt County. The Petroleum Pipe Line & Storage Co.'s No. 3 Mrs. S. McGee in the Daniels Survey is shut down at 1,301 feet after striking salt water. Reasonover and others cemented back from 1,257 feet on their test. They drilled plug and the test only showed a small amount of gas and oil. It will probably be abandoned.

The Womack Oil Co., which petitioned the Railroad Commission for a separation of the extreme south end of the East Texas Field from the main body, has another producer in that area. It made 15,000,000 feet of gas with a good showing of oil at 3,660 feet after topping pay at 3,650 feet. It is drilling ahead. A special hearing on the company's petition will be held at Austin on July 28. The Railroad Commission has not yet announced what disposition is likely to be made of the petition, whch gave reasons for separating this area from the rest of the field.

Thirty Locations in Main Field

Thirty locations were staked in the main field with 46 wells completed. Operators are drilling up their 10-acre units in order to obtain a higher allowable for their leases.

One-quarter of a mile of welding and 1½ miles of back filling are now being completed near the town of Polk on Sinclair Prairie Pipe Line Co.'s 140 miles of 12-inch parallel line connecting Colonels with Huffman Station near Houston. When this work is completed the line will be ready for use as testing has been done at sufficient intervals to prove the line ready for use when the last weld was completed.

This line gives the Sinclair Prairie Oil Co. an added outlet out of East Texas, and places it in a favorable position if it desires to become a larger purchaser in that field.

The Railroad Commission is completing new tender forms to be required for use of oil shipped from the East Texas Field and other Texas fields. The revised form was agreed upon at a conference of commission officials, railroad companies, pipe line companies, together with representatives of Secretary Ickes of the Interior Department at Washington. Copies of the revised form have been sent to Washington for Federal approval.

COMPLETIONS IN EAST TEXAS

North Gregg County

East Texas Refining Co.'s No. 4 R. R. Collins, top sand 3,686 feet, initial production 60 bbls. per hour through 2½-inch tubing, total depth 3,711 feet.

F. H. E. Oil Co.'s No. 5 R. Christian, top sand 3,630 feet, initial production 100 bbls. per hour through open 2-inch tubing, total depth 3,655 feet.

Gulf Production Co.'s No. 28 M. O. Sheppard, top sand 3,492 feet, initial production 90 bbls. per hour through 2-inch tubing choke, total depth 3,522 feet.

Manzell & Reynolds' No. 1 Mrs. Compton, top sand 3,632 feet, initial production 90 bbls. per hour through 2-inch tubing, total depth 3,645 feet.

W. H. Peckham's No. 1 J. W. Akin, top sand 3,499 feet, initial production 100 bbls. per hour through 2-inch tubing, total depth 3,508 feet. Pilot Oil Co.'s No. 1 Whatley, top sand 3,516 feet, initial production 40 bbls. per hour through 2-inch tubing choke, total depth 3,528 feet.

Rosier & Pendleton's No. 6-A Satterwhite, top sand 3,674 feet, initial production 60 bbls. per hour through 2-inch tubing choke, total depth 3,690 feet.

Selby Oil & Gas Co.'s No. 22-B Snavely heirs, top sand 3,555 feet, initial production 54 bbls. in one-half hour through 1-inch tubing choke, total depth 3,585 feet.

South Gregg County

Atlantic Oil & Production Co.'s No. 9 W. Smith, top sand 3,557 feet, initial production 65 bbls. per hour through 2-inch tubing, total depth 3,577 feet.

Bass & Dillard's No. 3-B S. Carr, top sand 3,479 feet, initial production 75 bbls. per hour through 2½-inch tubing choke, total depth 3,502 feet.

Cranfill & Reynolds' No. 4 Howard, top sand 3,627 feet, initial production 80 bbls. per hour through 2-inch tubing choke, total depth 3,629 feet.

Gulf Production Co.'s No. 5 J. S. Elder, top sand 3,514 feet, initial production 65 bbls. per hour through 2-inch tubing choke, total depth 3,529 feet.

Houston Oil Co.'s No. 3-A Hughey-Ross, top sand 3,474 feet, initial production 35 bbls. per hour through 2½-inch tubing choke, total depth 3,525 feet.

Reserve Petroleum Co.'s No. 3 A. Godfrey, top sand 3,474 feet, initial production 90 bbls. per hour through 2-inch tubing, total depth 3,599 feet.

Sinclair Prairie Oil Co.'s No. 1-B A. A. King, top sand 3,403 feet, initial production 26 bbls. in one-quarter hour through 2½-inch tubing, total depth 3,540 feet.

North Rusk County

Atlantic Oil & Production Co.'s No. 13 Brightwell, top sand 3,704 feet, initial production 90 bbls. per hour through 2-inch tubing, total depth 3,720 feet.

South Rusk County

Combined Oil Co.'s No. 14 G. W. Eaton, top sand 3,707 feet, initial production 115 bbls. per hour through 2-inch tubing choke, total depth 3,725 feet.

Gulf Production Co.'s No. 8-C Mayfield Co., top sand 3,631 feet, initial production 60 bbls. per hour through 2-inch tubing choke, total depth 3,642 feet.

Gulf Production Co.'s No. 3 C. F. O'Quinn, top sand 3,755 feet, initial production 60 bbls. per hour through 2-inch tubing choke, total depth 3,768 feet.

W. B. Hamilton's No. 6 L. B. Gambrell, top sand 3,669 feet, initial production 100 bbls. per hour through 2-inch tubing choke, total depth 3,685 feet.

Mid-Kansas Oil & Gas Co.'s No. 1 Robert Van Zandt, top sand 3,608 feet, no gauge, total depth 3,616 feet.

Darby Petroleum Co.'s No. 4 Rollins, top sand 3,617 feet, initial production 60 bbls. per hour through 2-inch tubing choke, total depth 3,637 feet.

Rodgers and others' No. 1 D. Bradford, top sand 3,501 feet, initial production 50 bbls. per day swabbing, total depth 3,580 feet.

Standard Oil Co. of Kansas' No. 5 M. L. Thompson, top sand 3,611 feet, initial production 100 bbls. in one-half hour through 2-inch tubing, total depth 3,627 feet.

Stanolind and Pure Oil Co.'s No. 20 R. A. Moores, top sand 3,593 feet, initial production 38 bbls. in 54 minutes through open 2-inch tubing, total depth 3,648 feet.

Stewart Holding Corp.'s No. 2 Jiles, top sand 3,701 feet, initial production 65 bbls. per hour through 2-inch tubing choke, total depth 3,721 feet.

Turman Oil Co.'s No. 7 A. D. and D. F. Deason, top sand 3,700 feet, initial production 37 bbls. per hour through 2-inch tubing, total depth 3,775 feet.

Smith County

Barney Carter's No. 2 T. O. Wright, top sand 3,680 feet, initial production 150 bbls. per hour through 2-inch tubing choke, total depth 3,700 feet.

Pine Grove Oil Co.'s No. 4 S. S. Cooke, top sand 3,726 feet, initial production 75 bbls. in 45 minutes through 2-inch tubing choke, total depth 3,729 feet.

Upshur County

Conservative Oil Co.'s No. 6 C. M. and V. Victory, top sand 3,663 feet, initial production 60 bbls. per hour through 2-inch tubing choke, total depth 3,690 feet.

WILDCAT COMPLETIONS

Angelina County

LaRue-Smith and others' No. 1 J. Perkins, dry and abandoned, total depth 1,502 feet; Antonio Flores Survey.

Smith County

Sun Oil Co.'s No. 1 Mrs. E. Jarvis, top Pecan Gap 2,880 feet, base 3,319 feet, top Austin chalk 3,686 feet, top sand 3,939 feet, top Georgetown lime 4,228 feet, dry and abandoned, total depth 4,254 feet.

Van Zandt County

Pure Oil Co.'s No. 4 N. B. Blake, initial production first 24-hour gauge after choke for proration 75 bbls., total depth 2,962 feet.

Big Lake Oil Co. Preparing to Test Its 11-C University Well at 8,323 Feet

By L. E. BREDBERG
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., July 24.—Another deep well in the Big Lake Field, Reagan County, is preparing to test. It is down to 8,323 feet in white lime, the Ordovician, from which other deep wells are producing in this area. This well is Big Lake Oil Co.'s No. 11-C University. It is also drilling No. 12-C University, which is down to 2,700 feet in lime.

Gulf Production Co.'s No. 103 McElroy in Section 197, Block F, Upton County, is making good time. It is down 5,065 feet drilling ahead. Measurement of this well for deviation showed it to be exceptionally straight for such depth, only off 2 per cent from vertical.

More litigation is showing up for the Yates Field, Pecos County, a field which has been quietly producing for several years and in which few lawsuits were expected. The attorney general filed suit on July 18 in the Ninety-Eighth District Court of Travis County, Austin, for the recovery of 561 acres, which was held by the Supreme Court in the Smith-Turner case to be vacant unsurveyed school land. It named as defendants the Mid-Kansas Oil & Gas Co., Fred Turner, Fred Turner, Jr., and the McGinley Corp.

Glasscock Area Extended

Lawson's No. 3-B Edwards extends the Glasscock County area another quarter of a mile to the north. It topped the pay at 2,018 feet and drilled to 2,183 feet, filling 700 feet with oil in two hours. The big pipe has been pulled preparatory to completing the test which is north of the Tribal Oil Co.'s discovery well of this area. The well is located in Section 16, Block 33, Township 2s, T.&P. Survey.

J. M. Cowden of Midland has sold a one-sixteenth mineral interest under five sections of his ranch in northern Ector County. The land is located in Section 24, 26, 27, 34 and 35, Block 43, Township 1n, T.&P. Survey, and is under lease by the Stanolind Oil & Gas Co. which has producers in Sections 26 and 34.

Joe Rush and others' No. 1 Dodge in Section 9, Block 30, Township 1s, T.&P. Survey, eastern Howard County, extends production another half mile to the west in the Dodge or Denman Pool. It topped the pay at 2,645-2,707 feet and at 2,733-2,832 feet. A shot of 450 quarts was placed at 2,643-2,834 feet and filled 2,000 feet with oil in 18 hours after the shot. Total depth is 2,834 feet.

WICHITA FALLS DISTRICT

The wildcat test of the Texas Co. on the Les Johnson farm, 14 miles west of Cromwell in Foard County, has at last logged an oil sand after encountering four gas sands. The test is located in Section 36, Block "L," in S.P. Survey. It was reported to be making around 3,250,000 feet of gas per day, spraying between 50 and 75 bbls. of oil, having a working pressure of around 1,050 to 1,100 pounds. It topped this fifth sand at 3,563 feet and was shut down 2 feet in the pay.

The first two tests on this ranch, Nos. 1 and 2, were dry holes, although both tests encountered gas. This last test, No. 3, was the first to pick up an oil pay. The first gas was logged at 3,088-90 feet. Three other gas sands were cased off in order to allow deeper drilling in quest of an oil sand.

A district court injunction was obtained by the Railroad Commission this week to allow commission field men to go upon the Danciger Oil & Refining Co.'s properties in the Panhandle and gauge storage tanks. A three-judge Federal court recently upheld the commission's proration orders and a suit against the company.

COMPLETIONS IN WEST TEXAS

Howard County

California Oil Co.'s No. 2 Roberts (old well drilled deeper), initial before deepening, 65 bbls. of oil and 225 bbls. of water per day, initial production after deepening 864 bbls. of oil per day on proration test, increases in oil 2,876-78 and 2,986-89 feet.

Ward County

Wahlenmaier Petroleum Co.'s No. 1 Bergman, top pay 2,177 feet, increase in oil and show of gas 2,184-2,208 feet, initial production 60 bbls. of oil per day flowing through casing, total depth 2,212 feet.

Winkler County

Richardson et al's No. 1 Scarborough, top pay 2,820-30 feet, increase in pay 2,843 feet, initial production 62½ bbls. of oil per day flowing through tubing, total depth 2,980 feet.

Changed Conditions Create New Production Problems

(Continued from Page 9)

be applied after natural flow ceases will depend upon local conditions at the well and the personal preference of the operator. It is known that many wells will be produced with gas lift just as lower Simpson wells have been produced for many months. But in the lower Simpson wells there is an appreciable amount of water coming in with the oil and to date Wilcox water has not moved updip much and few of the Wilcox wells make water at present.

This lack of water movement in the Wilcox formation is difficult to explain from the data at hand and while several conditions may be assumed, they do not afford definite knowledge of what actually is taking place.

The reservoir conditions in the Oklahoma City Field are commonly regarded as being complicated and to reduce the history of individual wells to general or average conditions is difficult. An interpretation of the available water data may lead to the conclusion that there is considerable difference in the rate, direction and manner of flooding in the three zones, namely, Arbuckle limestone, lower Simpson and Wilcox sand, due largely to the character of the formations.

The Arbuckle zone, the highest structurally, was flooded first. The next zone to show appreciable water volume was the lower Simpson or more specifically the Johnson sand in the lower Simpson formation. Based upon the location and the dates at which water has appeared in Johnson sand wells it does not seem probable that the water movement into this sand was "updip" along the "floor" of the Arbuckle, but rather across the limestone formation.

The path of this water movement was probably circuitous and with enough wells producing water it is possible that it could be handled without any appreciable increase. This is borne out by actual observations recently made of the rate of water production from the lower Simpson. It does not seem to be gaining in volume although water maps do indicate that it is actually spreading through the formation. About 37 per cent of lower Simpson wells now make water and about 50 per cent of the area is affected. Part of the lower Simpson formation is not drilled.

In a paper by D. R. Knowlton, H. C.

Charles and D. A. McGee, on the Wilcox sand of Oklahoma City presented before the midyear meeting of the American Petroleum Institute in Tulsa, in June, 1932, it is stated that the Wilcox formation is estimated to cover an area of 5,250 acres or 41 per cent of the total area of the field. Of the total estimated productive area of the Wilcox sand, 3,450 acres are within the corporate limits of Oklahoma City. Of the area within the corporate limits 1,700 acres, or 49 per cent, are in the U-7 zone or that part of the city open to drilling. The remaining 1,750 acres are within the city limits underlying the closely built portion in which drilling is prohibited. This portion that cannot be drilled is 33 per cent of the entire area estimated to be productive in the Wilcox.

It now seems apparent that water has not displaced the oil produced in the Wilcox zone and an appreciable pressure drop has occurred near the "tip" of this formation. While sufficient data are not available to make a complete analysis of this condition it is known that this Wilcox sand is relatively thick and well saturated with oil. It has good porosity and permeability. Wells are closely spaced near the tip of the Wilcox sand in the north portion of the field and as a consequence a greater quantity of oil has been withdrawn from this portion of the zone.

This rapid withdrawal of oil from only a portion of the Wilcox sand seems to lead to the conclusion that the time element required for replacement has not been sufficient and there has been a lag in oil movement updip. This further leads to the belief that there is a sufficient body of oil in the undrilled portion of the Wilcox zone to present an effective barrier in the path of the water in its attempt to move updip.

It is known that the vertical elevation between the tip of the Wilcox sand and the original water level is more than 300 feet and it is probably over a mile laterally between these points. In other words the hydrostatic conditions at the edge of the field are not favorable to water movement into or up through this oil bank and for this reason the expected repressuring of the Wilcox producing area has not taken place.

How much time must elapse before a sufficient differential in pressure between the gas cap and the edge water is difficult to estimate, but in the meantime it is apparent that gas will drain out of solution in the oil over much of the total producing area. This will lower the viscosity of this oil and make its recovery more difficult.

Completion Methods

As most of the Oklahoma City wells were completed with rotary and the bottom of the hole was drilled a sufficient distance to insure a good well, little coring was done in the producing section of the formation and its detailed stratigraphy was not well known.

One company recently completed one of its wells with cable tools and got some interesting data in so doing. This method of completion was possible because the formation pressure had dropped so low that the cable tools could be operated against it. Formerly formation pressures were so high that attempts to use cable tools resulted in fishing jobs because the tools were blown up the hole and caught in the casing.

In this cable tool completed well it was found that the upper 30 feet of the Wilcox formation produced gas only. Below this was from 6 to 10 feet of good oil and gas sand and then a break with more oil sands below. It was definitely proven that the Wilcox sand is not a continuous body from top to bottom and there are thin and rich streaks as well as partings, all of which have their effect upon the well's productive capacity.

This condition had been suspected in that field for a long time but production men did not have much datum to go on in attempting to solve some of their problems. Not knowing the relative position of partings in the Wilcox sand it was difficult to plan repair methods to be used in cutting off the upper gas cap part of the formation that has developed in recent months.

Now that some information is at hand regarding the stratigraphy of the Wilcox it is suggested that full strings of $5\frac{3}{16}$-inch casing may be run to cut off the upper gas zone or liners used to attempt to divert the gas flow through the oil-bearing portion of this formation. This program is going to take time to formulate and just how far it can be carried will depend upon conditions found in the individual wells.

Standard of California Has Arabian Concession

The granting of an oil concession in the Arabian Saudian Kingdom to the Standard Oil Co. of California by King Ibn Saud is reported. The decree gives exclusive rights of exploration for oil and exploitation in eastern Arabia to the company.

The company already has a concession on the Bahrein Islands in the Persian Gulf, where oil has been found. The geological formation in that region gave promise oil also would be found on the mainland in Arabia. The company's representative at Jeddah succeeded in getting a draft concession from the king, which he sent to America. The company agreed to the terms with certain modifications, which now have been accepted by the Saudian government. Exploration work is expected to begin soon. It is believed that if oil is found it will revolutionize all Arabia, transforming the desert into an industrialized country.

ROCKY MOUNTAIN AREA

Average daily production for the week ending July 22 follows:

WYOMING

	Bbls.
Salt Creek	16,210
Big Muddy	1,840
Badger Basin	40
Byron-Garland	100
Byron-East	Shut in
Dallas Derby	540
Dutton Creek	80
Elk Basin	550
Ferris	20
Frannie	220
Grass Creek	Shut in
Greybull	0
Hamilton Dome	840
Hudson	340
LaBarge	1,180
Lance Creek	200
Lost Soldier	1,950
Mule Creek	Shut in
Midway	70
Notches	Shut in
Oregon Basin	300
Osage	640
Pilot Butte	30
Rex Lake	30
Rock River	1,320
South Casper	Shut in
Poison Spider	250
Teapot	20
Warm Springs	0
Total	26,770

MONTANA

Buckley Border	370
Cat Creek	710
Cut Bank	1,300
Dry Creek	830
Kevin-Sunburst	3,450
Lake Basin	60
Pondera	1,060
Total	7,780

COLORADO

Florence	270
Fort Collins and Wellington	590
Iles Dome	580
Moffat	650
Orchard	140
Rangely	80
Tow Creek	230
Total	2,540

NEW MEXICO

Artesia	520
Cooper area	60
Empire area	5
Eunice area	610
Getty Pool	0
Hobbs	30,150
Hogback	220
Hospah	Shut in
Jal	1,510
Lea area	2,170
Jackson	830
Maljamar	220
Rattlesnake	640
Table Mesa	80
Total	37,010
Total all fields	74,100
Total previous week	73,300
Difference	800

Wildcat Operations in West Texas

Week Ending July 24

BREWSTER COUNTY

C. P. Link & Joiner et al's No. 1 McIntyre, 853 ft. from S and 2,390 ft. from E line of Sec. 31, W. J. Mitchell Sur. ... Drlg. 900 ft.

CONCHO COUNTY

Company, well, farm name, section and block— Remarks

Beasley et al's No. 1 Waring Estate, 400 ft. from N and E, Sec. 163, T.&N.O. Sur. ... Drlg. 2,675 ft.

CROCKETT COUNTY

Yount's No. 1 Shannon, 330 ft. out of NW cor. of Sec. 35, Blk. 1, G.C.&S.F. Sur. ... Drlg. 2,245 ft.

CRANE COUNTY

Loffland Bros.' No. 1 Tubbs, 1,334 ft. from N line and 1,320 ft. from W line of Sec. 9, Blk. B-27, P.S.L. Sur. ... S.D. 1,100 ft.

CULBERSON COUNTY

Miller Bros.' No. 1 fee, 1,980 ft. from N line and 660 ft. from E line of Sec. 61, Blk. 97, P.S.L. Sur. ... Drlg. 1,820 ft.

DAWSON COUNTY

Albaugh, Ray et al's No. 1 Robinson, 1,320 ft. from N and W lines of Sec. 46, Blk. M, E.L.R.R. Sur. ... Drlg. 1,550 ft.

ECTOR COUNTY

Broderick & Calvert et al's No. 1 E. F. Cowden, 2,240 ft. from E line, 330 ft. from S line of Sec. 25, Blk. 44, Twp. 2s, T.&P. Sur. ... Drlg. water well.

Gilpen et al's No. 1 B. H. Blakeney, 330 ft. from S and 440 ft. from E line of Sec. 32, Blk. 43, Twp. 1n, T.&P.R.R. Sur. ... Derrick.

Landreth Production Co. & Llano Oil Co.'s No. 1 O. B. Holt, 660 ft. from S and W lines of N half of Sec. 20, P.S.L. Sur. ... Prepare to spud.

Landreth Prod. and The Texas Company's No. 1 Holt, 660 ft. from S line and 2,025 ft. from E line of Sec. 16, Blk. 43, Twp. 1n, T.&P. Sur. ... Prepare to run tubing and test with acid; T.D. 4,450 ft.

Moran's No. 1 R. W. Smith, NW cor. of Sec. 12, Blk. 43, Twp. 1n, T.&P.R.R. Sur. ... Drlg. 2,480 ft.

Stanolind Oil & Gas Co.'s No. 2 E. F. Cowden, 660 ft. from N and W lines of Sec. 26, Blk. 43, Twp. 2s, T.&P.R.R. Sur. ... Prepare to spud.

Thomas et al's No. 1 Edwards, 330 ft. from S, 2,310 ft. from E, Sec. 38, Blk. 43, Twp. 3s, T.&P. Sur. ... Set casing at 3,327 ft.

Fred Turner's No. 1-A Addis, 1,650 ft. from N line and 2,200 ft. from E line of Sec. 35, Blk. 45, Twp. 2s, T.&P. Sur. ... S.D. 4,113 ft.; flowing about 70 bbls. day; may deepen.

Waggoner and Western Corp.'s No. 1 F. U. Addis, 1,650 ft. from N, 990 ft. from W line of Sec. 35, Blk. 54, Twp. 2s, T.&P.R.R. Sur. ... T.D. 3,970 ft.; run tubing.

FISHER COUNTY

Cranfill & Reynolds' No. 2 George, 330 ft. from N and W lines of NE of Sec. 200, Blk. 1, B.B.B.&C. Sur. ... T.D. 3,115 ft.; top lime 3,093-3,115 ft.; treating with 1,000 gallons of acid.

Southern Oil Co.'s No. 1 Beavers, 330 ft. from W and 660 ft. from S of S half of SW Sec. 193, B.B.B.&C. Sur. ... Flowed on agitation 120 bbls. first 3 hours; T.D. 3,103 ft.

GLASSCOCK COUNTY

Helms et al's No. 1 Helgar, 330 ft. from N and E lines of Sec. 18, Blk. 34, Twp. 3s, T.&P.R.R. Sur. ... S.D. for casing; T.D. 2,037 ft.

Lawson's No. 3 Mann Edwards, 1,321 ft. from S line and 1,340 ft. from E line of Sec. 16, T.&P.R.R. Sur., Blk. 33, Twp. 2s ... T.P. 2,108 ft.; filled 1,000 ft. of oil; T.D. 2,183 ft.

HOWARD COUNTY

Crosby Drlg. Co.'s No. 1 Leatherwood-Satterwhite, C of SE of NW, Sec. 25, Blk. 33, Twp. 1n, T.&P. Sur. ... Drlg. 720 ft.

L. C. Harrison's No. 4 L. C. Denman, 2,370 ft. from the E line and 2,325 ft. from S line of Sec. 10, T.&P.R.R. Sur., Blk. 30, Twp. 1s ... T.D. 3,008 ft.; plugged back to 2,915 ft.; shot 80 quarts 2,635-84 ft.; cleaned out and swabbed 35 bbls. in 24 hours.

JONES COUNTY

Dyer's No. 1 Odom, 200 ft. from S and 170 ft. from W of N 320 acres, G. Zumwalt Sur. ... Drlg. 650 ft.

LOVING COUNTY

Eppenauer Drlg. Co.'s No. 1-A Victor, 330 ft. from SW and 338 ft. from SE of NW of N half Sec. 4, Blk. 2, W.&N.W. Sur. ... Rigging up standard tools.

PECOS COUNTY

A. & M. Pet. Co.'s No. 1 University, 1,725 ft. from S line and 330 ft. from E line of Sec. 31, Blk. 16, University Sur. ... S.D. for casing; T.D. 1,624 ft.

REAGAN COUNTY

Big Lake Oil Co.'s No. 10-C University, 2,025 ft. from S and 375 ft. from W, Sec. 25, Blk. 9 ... Running tubing; T.D. 8,550 ft.

Big Lake Oil Co.'s No. 11-C University, 2,300 ft. from S line and 2,140 ft. from E line, Sec. 12, Blk. 2, University Sur. ... Drlg. 8,323 ft.

Big Lake Oil Co.'s No. 12-C University, 928 ft. from N, 740 ft. from E line of Sec. 12, Blk. 2, University land ... Drlg. 2,206 ft.

Continental Oil Co.'s No. 8-B University, 1,300 ft. from S and 1,775 ft. from W, Sec. 36, Blk. 9 ... Produced 800 bbls. on 18th; T.D. 8,695 ft.

Continental Oil Co.'s No. 9-B University, 1,900 ft. from S line, 1,805 ft. W of E line of Sec. 39, Blk. 9, University Land Sur. ... Drlg. 2,575 ft.

I. P. Williams et al's No. 1 Scott, 1,650 ft. from N and 330 ft. from W. Sec. 179, Blk. 1, T.&P. Sur. ... Drlg. 2,286 ft.

REEVES COUNTY

Freels Hugh et al's No. 1 J. B. Greeman, 330 ft. from NE and 2,310 ft. from S line of Sec. 21, Blk. 2, H.&G.N. Sur. ... Underreaming lugs; T.D. 1,100 ft.

Merry Brothers & Perrin's No. 1 H. H. Johnson, 1,015 ft. from S and W lines of Sec. 5, Blk. 4, H.&G.N. Sur. ... Elevation 2,610 ft.; waiting on cement to set; T.D. 4,170 ft.

RUNNELS COUNTY

Mann's No. 1 T. B. Wade, 330 ft. from E line and 150 ft. from S line of 73-acre tract, Blk. 10, Norvel Travis Sur. No. 533 ... Drlg. 2,285 ft.

Simmons et al's No. 1 H. E. Wade, 150 ft. from S and 1,650 ft. from W line, Subdv. No. 8, Norvel Travis Sur. No. 533 ... Derrick.

SCHLEICHER COUNTY

Eastland Oil Co.'s No. 1 Joe Tisdale, Sec. 79, Blk. M, G.H.&S.A. Sur. ... T.D. 6,108 ft.

UPTON COUNTY

Gulf Prod. Co.'s No. 103 McElroy, 1,980 ft. from S and 660 ft. from W, Sec. 197, Blk. F, C.C.S.D.&R.G.N.G. ... Drlg. 4,944 ft.

WARD COUNTY

George Bentley et al's No. 1 C. Bergman, 330 ft. from NE line and 2,310 ft. from NW lines of Sec. 26, Blk. 5, H.&T.C. Sur. ... Fishing for tools; T.D. 2,647 ft.

George Bentley et al's No. 1 A. Emory, 1,650 ft. from NE line and 2,310 ft. from NW line of Sec. 26, Blk. 5, H.&T.C. Sur. ... T.D. 2,301 ft.

W. A. Black et al's No. 1 Ann B. Gordon, 990 ft. from NW and 330 ft. from NE lines of Sec. 6, Blk. 34, H.&T.C. Sur. ... Running tubing; T.D. 2,485 ft.; flowed 355 bbls. on 9th.

Eppenauer Drlg. Co.'s No. 1 University, 330 ft. from N and 440 ft. from E of S half of Blk. 16 ... S.D. 1,415 ft.

Gulf Prod. Co.'s No. 30 O'Brien, 990 ft. from S line and 660 ft. from W line of Sec. 6, Blk. F, G.&M.M.B.&A. Sur. ..... T.D. 2,850 ft.; plugged back to 2,654 ft.; pumped 27 bbls. of oil first 24 hours.

WINKLER COUNTY

Colonial Oil Co.'s No. 2 State Scarborough, 990 ft. from W and 102½ ft. N of the NE cor. of Sec. 1, School Blk. 77, located in Sec. 1, Blk. W.F. ..... **Rig up.**

Sid Richardson's No. 3 John Seally, 2,310 ft. from the N line and 330 ft. from the W line of Sec. 94, G.&M.M.B.&A. Sur. ..... Drlg. 880 ft.

East Central Texas Wildcats

(Continued from Page 99)

East Texas Refining Co.'s No. 5 C. Fisher, 3,400 ft. from N line and 2,980 ft. from E line of survey, J. Ruddle Sur. ..... T.D. 825 ft.

East Texas Refining Co.'s No. 8 White, 5,700 ft. from N line and 820 ft. from E line of survey, H. Edwards Sur. ..... Rig up.

Everett Drilling Co.'s No. 2 O. Cooke, 3,490 ft. from W line of survey and 1,750 ft. from N line, G. F. Penn Sur. ..... Drlg. 3,620 ft.

Foundation Oil Co.'s No. 3 L. Willis, 4,820 ft. from S line and 5,950 ft. from E line of survey, G. W. Hooper Sur. ..... Rig up.

Heyser & Heard's No. 3 Hindman-Guy, 5,160 ft. from S line and 2,000 ft. from W line of survey, G. W. Hooper Sur. ..... Derrick.

Rodger Lacy's No. 5 fee, 4,300 ft. from N line and 3,990 ft. from W line of survey, M. V. Winkle Sur. ..... Waiting on cmt. to set; T. D. 3,543 ft.

Lee and Burnett's No. 1 Walker, 400 ft. from N line and 2,180 ft. from E line of survey, M. Dillard Sur. ..... Waiting on cmt. to set 3,595 ft.

Magnolia Petroleum Co.'s No. 3 L. E. Orms, 6,440 ft. from N line and 4,910 ft. from W line of survey, W. H. Castleberry Sur. ..... Waiting on cmt. to set; T. D. 3,558 ft.

Mullendore and Berry's No. 3 G. Davis, 1,700 ft. from most northerly S line and 3,750 ft. from most easterly E line of survey, W. P. Chisum Sur. ..... Drlg. 1,600 ft.

Powell & Irion's No. 1 Godfrey, 900 ft. from N line and 2,350 ft. from E line of survey, M. Dillard Sur. ..... S.D. 3,602 ft.

Rabbit Creek Oil Co.'s No. 2 Elder, 380 ft. from W line and 73 ft. from S line of survey, John Wilkerson Sur. ..... Waiting on cmt. to set 3,507 ft.

Reserve Petroleum Co.'s No. 3 A. Godfrey, midway between Nos. 1-A and 2-A, M. V. Winkle Sur. ..... Derrick.

A. D. Robinson's No. 1 Hilburn Estate, 1,199 ft. from S line and 5,220 ft. from W line of survey, J. Wilkerson Sur. ..... Drlg. 2,500 ft.

Rosier and Pendleton's No. 7-A Nicholson, 2,050 ft. from N line and 330 ft. from E line of survey, M. Mann Sur. ..... T.D. 3,676 ft.; swabbed dry; small show oil; S.D.

A. L. Slaughter's No. 1 R. B. White, 480 ft. from N line and 30 ft. from E line of survey, C. H. Alexandria Sur. ..... Fishing; T.D. 2,871 ft.

Stanolind Oil & Gas Co.'s No. 4 Jones, 1,068 ft. N and 378 ft. W of SE cor. of 30.58-ac. lease, G. W. Hooper Sur. ..... Drlg. 2,285 ft.

Steen Drilling Co.'s No. 6 Lodin, 330 ft. from S and W lines of 27.3-ac. lease, G. W. Hooper Sur. ..... Drlg. 2,500 ft.

Sun Oil Co.'s No. 3 A. G. Morton, 330 ft. from W line of lease and 660 ft. S of No. 3, S. Baggett Sur. .... Drlg. 3,360 ft.

Sun Oil Co.'s No. 12 J. W. Akin, 660 ft. from Nos. 5 and 6 and 330 ft. from S line of lease, William G. Painter Sur. ..... Derrick.

Sun Oil Co.'s No. 9 A. S. Morton, 330 ft. from N and W lines of lease, S. Baggett Sur. ..... Derrick.

Superior Oil Co.'s No. 14-A Pritchard, 3,150 ft. from S and 100 ft. E of most southerly SW cor. of G. R. Rains Sur., F. W. Johnson Sur. ..... Drlg. 2,700 ft.

Sutton & Hawkins' No. 6 Whittaker, 1,730 ft. from N line and 480 ft. from E line of survey, C. H. Alexandria Sur. ..... Waiting on cmt. to set; T. D. 3,579 ft.

Wise and Jackson's No. 5 Rosa Corbin, 5,860 ft. from S line and 2,250 ft. from E line of survey, H. Edwards Sur. ..... Waiting on cmt. to set; T. D. 3,606 ft.

Yeager et al's No. 2 Howard, 90 ft. from N line and 2,350 ft. from E line of survey, Mary Scott Sur. ..... Drlg. 3,335 ft.

HENDERSON COUNTY

McElreath and Suggett et al's No. 1 Ferguson, 330 ft. out of most southerly NW cor. of 252.8-ac. tract, William P. Wyche Sur. ..... Drlg. 2,370 ft.

W. C. McGlothin et al's No. 1 T. H. English, 330 ft. out of SE cor. of tract in Blk. No. 15, on 114-ac. tract, J. Henderquez Sur. ..... Derrick.

HOPKINS COUNTY

Culbersen & Lynch's No. 1 Louis Stribling, 150 ft. from NW cor. of tract and lease, Thomas Norris Sur. .. **Rig up.**

Delworth-Hogan and Ashby's No. 1 Logan, 250 ft. from S and E lines of 175-ac. tract, A. L. Wetman Sur. .. Coring 3,456 ft.

Mudge Oil Co.'s No. 1 T. R. Cargill, 330 ft. out of NE cor. of 64-ac. tract, 3 miles N of Sulphur Springs, John Hastings Sur. ..... Derrick.

Pete Wiggins et al's No. 1 fee, 400 ft. from S line and 567 ft. from W line of 48-ac. tract, Nacogdoches University Lands Sur. ..... Coring 4,830 ft.

HUNT COUNTY

Solar Exploration Co.'s No. 1 Smith, 210 ft. from E line and 370 ft. from S line of lease, William Glass Sur. ..... **T.D. 1,500 ft.**

KAUFMAN COUNTY

J. M. Scott et al's No. 2 Pannill, 2,550 ft. from NE line and 6,000 ft. S of Texas Midland Railroad, A. Cherino Sur. ..... Set csg. 2,200 ft.

LEON COUNTY

Bateman et al's No. 1 A. C. Carlyle, 150 ft. out of NE cor. of survey, Mary Elem Sur. ..... Drlg. 5,305 ft.

Shell Petroleum Corp.'s No. 1 Beggs, center of 123.5-ac. tract, John Carter Sur. ..... Fishing 4,184 ft.

LIMESTONE COUNTY

C. C. Curtis et al's No. 1 Emma Daniels, 150 ft. from W line and 150 ft. from S line of 42.5-ac. tract in Pedro Varela Sur. ..... Waiting on cmt. to set 60 ft.

RUSK COUNTY

Abercrombie and Harrison's No. 2 Cantrell, 500 ft. S of No. 1 Cantrell, R. W. Smith Sur. ..... Waiting on cmt. to set; T.D. 3,659 ft.

Barnsdall Oil Co.'s No. 4 T. H. Gill, W offset to McDonald's No. 2 Brightwell, R. W. Smith Sur. ..... Derrick.

Bay Oil Co.'s No. 7 D. N. Peterson, 440 ft. from S line and 735 ft. from W line of lease, J. S. Carrithers Sur. ..... Rig up.

Blackwell Oil & Gas Co.'s No. 8 Stone, 330 ft. from S and W lines of 53.04-ac. tract, M. J. Pru Sur. .... Drlg. 1,459 ft.

Bristol-Duncan-White's No. 1 Womack, 2,760 ft. from N line and 80 ft. from E line of survey, I. Moore Sur. ..... Drlg. 2,150 ft.

Cordova Union Oil Co.'s No. 1-D C. O. Christian, 1,498 ft. from N line and 1,880 ft. from W line of survey, D. Clark Sur. ..... Waiting on standard rig; T.D. 3,740 ft.

Crabtree et al's No. 6 Giles, 150 ft. from S line and 330 ft. from W line of lease, M. J. Pru Sur. ..... Rig up.

Cullen Oil Co.'s No. 1 Giles, 3,610 ft. from N line and 1,900 ft. from E line of survey, M. J. Pru Sur. .... Waiting on cmt. to set 3,716 ft.

Devonian Oil Co.'s No. 6 W. P. Moore, 1,144 ft. N of SE cor. and 354 ft. from E line of lease, J. Womack Sur. ..... Rig up.

Dyck Oil Co.'s No. 4 John Bell, 360 ft. from N line and 3,650 ft. from E line of survey, S. P. Hollingsworth Sur. ..... Waiting on cmt. to set; T.D. 3,822 ft.

East Shore Oil Co.'s No. 8 Fox, 600 ft. due S of No. 1, A. Carmack Sur. ..... Rig up.

Griffin & Barnes' No. 1 fee, 12 ft. from S and W lines of 2-ac. tract, J. B. De Cadena Sur. ..... **Waiting on cmt. to set.**

H. L. Hunt's No. 5-C Joe Lee, 710 ft. from S line and 330 ft. from E line of lease and survey, J. Lindley Sur. ..... Derrick.

H. L. Hunt's No. 3 B. F. Maxwell, 390 ft. from N line and 1,500 ft. from E line of survey, R. H. Penny Sur. ..... Rig up.

Jordan & Ramsey's No. 1 L. W. Prior, 330 ft. from N line and 607 ft. from E line of 53-ac. lease, Walker Pettit Sur. ..... **T.D. 2,841 ft.**

Lion Oil & Refining Co.'s No. 11-B H. Brooks, 4,960 ft. from S line and 1,410 ft. from E line of survey, M. J. Pru Sur. ..... Drlg. 1,915 ft.

Joe Marr Drilling Co.'s No. 1 M. Lee, 459 ft. S and 330 ft. W of SW cor. of Stanolind's 100-ac. Lacy tract, J. H. Sparks Sur. ..... Derrick.

C. L. McMahon's No. 6 S. S. Laird, 108 ft. from N line and 162 ft. from W line of lease, R. W. Smith Sur. ..... Bldg. derrick.

Martin and Cockburn's No. 4 J. P. Cansler, 1,620 ft. from N line and 1,130 ft. from W line of survey, E. Collard Sur. ..... **Rig up.**

George B. McCamey's No. 2 J. Minchew, 1,600 ft. from S line and 170 ft. from E line of survey, H. B. Dance Sur. ..... Rig up.

Charles McDonald et al's No. 2 Brightwell, 700 ft. from N line and 2,200 ft. from E line of survey, R. W. Smith Sur. ..... Fishing; T.D. 3,692 ft.

Mid-Kansas Oil & Gas Co.'s No. 12 M. C. DeQuerin, 953 ft. from S line and 300 ft. from W line of lease, J. B. De Cadena Sur. ..... Rig up.

Mid-Kansas Oil & Gas Co.'s No. 14 E. E. Moores, 140 ft. from S line and 3,260 ft. from E line of survey, M. J. Pru Sur. ..... **Rig up.**

Mid-Kansas Oil & Gas Co.'s No. 15 E. E. Moores, 3,720 ft. from E line and 660 ft. from N line of survey, J. B. De Cadena Sur. ..... Drlg. 3,625 ft.

Walker Murray et al's No. 1 W. H. Arnold, 330 ft. from S and W lines of 50-ac. tract, Levi N. Sparks Sur. ..... Waiting on cmt. to set; T.D. 3,647 ft.

Patterson Drlg. Co.'s No. 3 Brock Estate, 2,320 ft. from N line and 100 ft. from E line of survey, R. W. Smith Sur. ..... **Derrick.**

Rodgers & Rodgers' No. 2 A. J. and D. F. Deason, 2,209 ft. from S line and 2,340 ft. from E line of survey, M. J. Pru Sur. ..... Waiting on cmt. to set; T.D. 3,692 ft.

Sun Oil Co.'s No. 11 J. R. Beall, 6,220 ft. from S line and 4,400 ft. from W line of survey, W. P. Chisum Sur. ..... **Derrick.**

Stroube and Stroube's No. 2 R. O. Russell, 150 ft. from W line and 303 ft. from E line of 16.3-ac. tract, T. J. Martin Sur. ..... Drlg. 2,815 ft.

Tide Water Oil Co.'s No. 6 Leverett, 330 ft. from S line and 1,560 ft. from E line of lease and survey, W. W. Simms Sur. ..... Rig up.

Weaver-Crim Corp.'s No. 3-B Bean, 322 ft. from S line and 1,270 ft. from W line of survey, Mary Cogswell Sur. ..... Derrick.

Wemack Oil Corp.'s No. 2 W. H. Arnold, 330 ft. from S and W lines of 112-ac. tract and survey, William Christian Sur. ..... Drlg. 3,664 ft.

SMITH COUNTY

British-American Oil Co.'s No. 5 M. L. Thompson, 3,290 ft. from N line and 1,830 ft. from E line of survey, I. Moore Sur. ..... Derrick.

H. L. Hunt's No. 11-A R. W. Fair, 1,130 ft. from S line and 330 ft. from W line of survey, R. McAnnulty Sur. ..... T.D. 3,600 ft.

Long Drilling Co.'s No. 3 G. A. Turner, D. W. Campbell Sur. ..... **Derrick.**

Alex McCutcheon's No. 4 Stone, 890 ft. from N line and 960 ft. from W line of survey, D. Shaw Sur. .... Derrick.

Mid-Kansas Oil & Gas Co.'s No. 20 J. H. Sharp, 1,037 ft. from S line and 990 ft. from E line of lease, M. D. L. S. Coy Sur. ..... Derrick pattern.

Reed et al's No. 2 T. O. Wright, 150 ft. from W line and 50 ft. from N line of lease, J. Vargas Sur. ..... Rig up.

Texas Co.'s No. 10 Blackwell, W offset to Hamilton's No. 6 Gambrell, James Jordan Sur. ..... Drlg. 2,165 ft.

UPSHUR COUNTY

W. V. Greer's No. 1 A. B. Mackey, 2,400 ft. from N line and 4,080 ft. from E line of survey, H. Pineda Sur. ..... Drlg. 3,605 ft.

Humble Oil & Refining Co.'s No. 12 G. W. Johnson, 5,320 ft. from N line and 3,060 ft. from W line of survey, G. W. Hooper Sur. ..... Waiting on cmt. to set 3,670 ft.

Mudge Oil Co.'s No. 6-A S. E. Richardson, 1,750 ft. from N line and 1,480 ft. from E line of survey, D. Ferguson Sur. ..... Drlg. 3,325 ft.

Peckham and Meadows' No. 1 L. P. League, 1,200 ft. from N line and 330 ft. from W line of survey, H. F. Rodgers Sur. ..... Rig up.

Perrin & Fell's No. 3 William Landers, 330 ft. from S line and 330 ft. from W line of 64.34-ac. tract, G. W. Hooper Sur. ..... Drlg. 600 ft.

Rosier and Pendleton's No. 5-A Satterwhite, 330 ft. from S line and 660 ft. E of No. 4, D. Sanches Sur. .. Rig up.

Sun Oil Co.'s No. 3 B. L. Loden, 5,260 ft. from N line and 1,050 ft. from W line of survey, G. W. Hooper Sur. ..... Drlg. 3,705 ft.

Twin Oil Co.'s No. 8 Bonner, 1,089 ft. from S line and 1,020 ft. from W line of survey, J. McRae Sur. ..... Drlg. 3,072 ft.

VAN ZANDT COUNTY

Everett Drilling Co.'s No. 1 L. Tunnell, 150 ft. out of SW cor. of 72.4-ac. tract, 4 miles SW of Van, M. Moss Sur. ..... Drlg. 1,450 ft.

Peden & Olsen's No. 2 W. S. Branson, 725 ft. from N line and 150 ft. from W line of tract, M. Gross Sur. ..... Spudding.

Petroleum Pipe Line Co.'s No. 3 Mrs. S. McGee, 650 ft. from S line and 150 ft. from W line of Blk. No. 17, William Daniels Sur. ..... S.D. 1,300 ft.

Pure Oil Co.'s No. 4 J. M. Martin, 525 ft. W of E line and 200 ft. N of S line of J. M. Martin Sur., J. Stephenson Sur. ..... Drlg. 2,235 ft.

Ray Drilling Co.'s No. 1 J. W. Mallory, 1,150 ft. from S line and 150 ft. from W line of 217-ac. tract, John Walling Sur. ..... Derrick.

Van Oil Association's No. 1 Tankersley, 200 ft. from E and 1,000 ft. from S of farm, L. Landers Sur. ..... T.D. 1,284 ft.

Oklahoma's Allowable Highest Since Seminole Boom; Logan County Well Proves Gusher

By W. A. SPINNEY
Staff Correspondent, Oklahoma Fields

Oklahoma's daily allowable production for August is the highest since the Greater Seminole boom days. All nominations made a few days ago by the purchasing companies were allowed. Under the new order of the Oklahoma Corporation Commission the total demand reached 601,596 bbls. daily, which was granted. This is an increase of 42,999 bbls. a day over the previous month.

The Logan County wildcat near Crescent, which had shown indications of being an important well, proved a gusher when it was opened for its initial production test, making 4,754 bbls. in 20 hours. It was then shut in because of the lack of a pipe line to handle the production.

A community test was staked in the extreme northeastern part of Seminole County by five major oil companies. The Lucien-Wentz Field in Noble County was defined to the southwest by a dry hole.

The daily average production of the principal pools in the State for the week ending July 22 was as follows:

	Week ending July 22	Previous week
Bowlegs	13,335	11,835
Bristow-Slick	11,229	11,150
Burbank	10,100	10,100
Carr City	9,395	9,430
Earlsboro	12,335	11,830
East Earlsboro	20,300	17,730
South Earlsboro	1,555	1,585
Little River	21,295	18,380
East Little River	1,215	1,130
Oklahoma City	281,896	264,105
Seminole City	12,945	10,775
Tatums	10,500	10,590
Total	406,091	378,550
Others	215,440	209,250
Total state	621,531	587,800

Interesting Wildcat in Noble County

Another interesting wildcat test south of Perry in Noble County found water in the Wilcox sand. It was the Barnsdall Oil Co.'s No. 3 Waltermire, NW cor. SW NW Section 33-21-1w, and it was expected to open a new deep sand horizon in that area. The test found water in the Wilcox sand at 5,005-14 feet. It was believed to be running high on structure and the Simpson sand carried a showing of oil. The Viola lime was found at 4,938 feet. The Simpson dense was found at 4,963 feet and the Simpson dolomite at 4,964 feet, and both yielded showings of oil. This test was near the old south Perry gas pool.

A unit wildcat test announced by Sinclair Prairie Oil Co. and others is No. 1 M. Tierney, SE cor. Section 2-11-6, in the extreme northeastern part of Seminole County. The location of this test is about half way between the town of Sparks and Keokuk Falls. The companies interested in the unitized block include Carter Oil Co., with 133 acres; Texas Co., 80 acres; Mid-Continent Petroleum Corp., 40 acres; Sinclair Prairie Oil Co., 239 acres; and the Gypsy Oil Co., 104 acres.

The acreage in the unit block includes a correction strip along the east side of Section 2-11-6, the SE Section 2, NE Section 11, part of the SE Section 1, and part of the NE Section 12. The total in the block is about 677 acres.

The location is north of the recently discovered Keokuk Falls Pool and north of another wildcat test being drilled by the Carter Oil Co. and others in Section 23-11-6.

In the Greater Seminole area, the Mid-Continent Petroleum Corp.'s No. 1 Brandenberg, SW cor. NE Section 33-7-4, in the South St. Louis area of Pottawatomie County, swabbed 895 bbls. of oil in 12 hours from the Simpson sand at 4,190-97 feet. The same company's No. 1 Factor, SE cor. NW SE Section 15-7-8, swabbed 71 bbls. of oil in 19 hours from the shallow sand at 1,189-1,201 feet. This well is located in the West Holdenville Field of Hughes County.

The Southern Oil Co.'s No. 1 Diamond, NE cor. SE SW Section 8-6-7, in the southeastern part of Seminole County, found the Viola at 3,870 feet and was drilling at 3,973 feet.

Wildcat Operations in Oklahoma

Northern Oklahoma

ALFALFA COUNTY

Company, farm and location— Remarks:
Acre et al's No. 1 Acre, C SW NE Sec. 14-24-11w..... O.W.D.D.; drlg. 5,580 ft.

BECKHAM COUNTY

Pattee Royalty Co.'s No. 1 Goose Tree, SW SE SW SE Sec. 32-10-23w ..... Drlg. 3,004 ft.

CADDO COUNTY

Denver P. & R. Co.'s No. 1 Noe, NW SW SW Sec. 34-10-10w ..... Drlg. 9,500 ft.
W. L. Miller's No. 1 Gardner, SE SW Sec. 26-6-10w.... Rig.

COAL COUNTY

Docd & Burton's No. 1 Grigsby, NW SE NE Sec. 35-1-8.. Drlg. 1,878 ft.
Funk & Russell's No. 1 Miller, SE NE Sec. 10-2-8 ..... Fishing 2,750 ft.

GARFIELD COUNTY

Continental Oil Co.'s No. 1 Thompson, NW SW SW Sec. 7-24-4w ..... Abd. 6,580 ft.
J. H. Lewis' No. 1 Clark, C NW NW Sec. 34-21-5w ..... Rig.

HUGHES COUNTY

Dixie-Lee Oil Co.'s No. 1 Taylor, C NW Sec. 37-5-10.... Drlg. 350 ft.
Gilcrease Oil Co.'s No. 1 Thompson, NW SE Sec. 34-7-8. Abd. 1,391 ft.
Pioneer Pet. Co.'s No. 1 Brock, SE cor. Sec. 26-5-11 ..... Rig.
Redwine et al's No. 1 Badger, C N half SW SW Sec. 4-5-11 ..... Drlg. 330 ft.
Scruggs et al's No. 1 Black, NE Sec. 13-9-10 ..... Rig.

KAY COUNTY

Blauner et al's No. 1 Maple, NE NW SE Sec. 20-27-4.... Drlg. 660 ft.

KIOWA COUNTY

Christian's No. 1 Jones, NE NW Sec. 8-7-18w ..... Drlg. 1,900 ft.
King & Moore's No. 1 King, SE SW NW SW Sec. 27-7-20w ..... Drlg. 972-73 ft; est. 2,000,000 ft. of gas.
McWhirter et al's No. 1 Vanderneck, NE NW Sec. 3-7-19w (O.W.D.D.) ..... Drlg. 2,155 ft.

LINCOLN COUNTY

Magnolia Pet. Co.'s No. 1 Wagoner, SW SE Sec. 2-14-3 .. Drlg. 4,902 ft.

LOGAN COUNTY

Gypsy Oil Co.'s No. 1 McConnell, C NE SE Sec. 28-17-4w. Wilcox 6,120-41 ft.; 4,700 bbls. in 20 hrs.
Shell Pet. Corp.'s No. 1 Faulkner, C SE NW Sec. 11-15-4w Drlg. 6,706 ft; show wtr.

MURRAY COUNTY

A. E. Harden's No. 1 Sadler, NE Sec. 19-1-2..... Rig.
T. E. Revells et al's No. 1 Wolfe, NE cor. Sec. 18-1-2.. Rig.

MUSKOGEE COUNTY

J. S. Routt et al's No. 1 Escoe, CWL SE NE Sec. 17-13-17 Drlg. 905 ft.

NOBLE COUNTY

Sinclair Prairie's No. 1 Jerome, SW cor. Sec. 15-20-2w.. T.D. 5,337 ft; P.B. to 4,955-70 ft. to test.
Wentz & Feagen's No. 1 Eyler, C SE SW Sec. 10-21-2... Drlg. 300 ft.

OKLAHOMA COUNTY

Mid-Continental Oil Co.'s No. 1 Edwards, C SE SE Sec. 19-11-1 ..... W.O.C.S. 260 ft.
F. Russell's No. 1 Heapley, SW NW NE Sec. 23-12-3w.. Drlg. 3,600 ft.

PAYNE COUNTY

Kemp & Nunnelee's No. 1 Crane, SW SE SW Sec. 10-17-6 Drlg. 1,300 ft.
O. N. Maines et al's No. 1 Scheldberg, NW SW NW Sec. 27-22-6 ..... Wilcox sand 3,114-38 ft.; wtr.

PITTSBURG COUNTY

Moffett & Hall's No. 1 Jones, C NE NW Sec. 14-8-14 .. Drlg. 2,655 ft.

PONTOTOC COUNTY

Gilbert's No. 1 Starritt, NW SE Sec. 28-4-6..... Drlg. 1,313-20 ft; 5,000,000 ft. gas.
Choctaw O. & G. Co.'s No. 1 Thompson, SW NE SW Sec. 1-1-7 ..... Drlg. 1,300 ft.
W. E. McGraw's No. 1 Mayhue, NE Sec. 19-2-6..... Drlg. 1,180 ft.
McGee et al's No. 1 Newborn, SW NE Sec. 31-5-4..... Rig.
Williams' No. 1 Kroth, NE SE Sec. 33-3-4..... Drlg. 1,977 ft.
Wirrick's No. 1 Lee, SE SW Sec. 29-2-7 ..... Drlg. 2,500 ft.

POTTAWATOMIE COUNTY

Payne Drlg. Co.'s No. 1 Lovelace, NW SW NW Sec. 27-6-4 W.O.C.S. 3,623 ft.

SEMINOLE COUNTY

Carter Oil Co.'s No. 1 Bay, C W½ NE NE Sec. 23-11-6.. Rig.
Sinclair Prairie's No. 1 Tierney, SE cor. Sec. 2-11-6..... Rig.
Sibble & Freeman's No. 1 Gilbert, SW NW Sec. 25-8-7.... Machine.
Stewart & Egan's No. 1 Sanderson, NE SW Sec. 27-6-5.. Spudding.
Filmlee's No. 1 Bowlegs, SE NE SW Sec. 1-7-7 ..... Drlg. 710 ft.
Armstrong et al's No. 1 Diamond, NE SE SW Sec. 8-6-7.. Drlg. 3,820 ft.
Donnelly et al's No. 1 Shepard, SE NE Sec. 4-8-8..... Sand 1,395-1,405 ft; wtr.; fishing 1,640 ft.

WASHITA COUNTY

McWhirter & Bost's No. 1 Hall, SW SE SE Sec. 28-8-19w. Drlg. 200 ft.

Southern Oklahoma

ATOKA COUNTY

Blake's No. 1 Galbreath, SW NE SE Sec. 5-1-15 ..... Drlg. 248 ft.
Malernee et al's No. 1 Cole, NE NW Sec. 19-2s-14..... Spudding.
L. E. Stewart et al's No. 1 Stewart, SE SE Sec. 2-4s-10... Drlg. 1,930 ft.
Wacker et al's No. 1 Baskett, SW NE NW Sec. 18-1-15.. Drlg. 325 ft.

JEFFERSON COUNTY

Hobbs' No. 1 Barnett, NE SE SW Sec. 32-5-5w..... Abd. 2,270 ft.
Wakefield's No. 1 Kelly, NW SE Sec. 1-5-8w..... Drlg. 550 ft.

STEPHENS COUNTY

Doyle Oil Co.'s No. 1 Cunningham, SE NE NW Sec. 4-1-6w ..... Drlg. 2,500 ft.
Sledge et al's No. 1 Worley, SW SE SW Sec. 22-2-7w.... Fishing 460 ft.

TILLMAN COUNTY

Emenheser et al's No. 1 Pace, C SW Sec. 3-4s-17w..... Drlg. 3,200 ft.
J. H. Everett's No. 1 Crane, SW cor. Sec. 15-3S-14w..... Rig.
Gypsy Oil Co.'s No. 1 Pitcher, NW Sec. 26-4s-15w..... Drlg. 2,764 ft.
Gypsy Oil Co.'s No. 1 Co. Do. Pony, NW cor. Sec. 27-4s-15w ..... Drlg. 3,000 ft.

Crescent Wildcat Opened to Production

Gypsy Oil Co. and Carter Oil Co.'s No. 1 Miller, C NE SE, Section 28-17-4w, discovery wildcat near Crescent, in Logan County, was opened to regular production July 20. In the first 15 minutes it made 160 bbls. of oil. In 15¼ hours it made 3,693 bbls. of oil and in 20 hours made 4,754 bbls.

The company has erected four 500-bbl. tanks at the location and a separator. A pipe line connection was made to the tanks by the Cimarron Valley Pipe Line Co.

This wildcat test opens a new producing area in Logan County and many believe it will be a major pool for the State. The oil is 43 gravity, the well is high on structure, shows no water and has a high pressure. These conditions are indicative of a large reservoir. The well is producing from the Wilcox sand at 6,120-41 feet. The last 10 feet of hole was cored and the well threatened to blow out when the plug was drilled about a week ago.

Since the well found oil in the Wilcox sand a number of lease and royalty trades have been made surrounding it. The nearest production is the Eason Oil Co.'s No. 1 Katscher, 1½ miles southeast, where the Layton sand was found productive. The nearest Wilcox sand production is in the Marshall Pool, in the northwestern part of the county and the Lucien Pool, in Noble County. Two locations have been staked south of the discovery well and work is under way at both.

Bigger Than Oklahoma City Discovery

The Crescent discovery well is a larger producer than was the discovery well in the Oklahoma City Field. In 20 hours on July 20 the well produced as follows by hourly gauges:

	Bbls.
3:45 to 4:45	365
4:45 to 5:45	262½
5:45 to 6:45	242½
6:45 to 7:45	245
7:45 to 8:45	230
8:45 to 9:45	232½
9:45 to 10:45	222½
10:45 to 11:45	230
11:45 to 12:45	232½
July 21:	
12:45 to 1:45	222
1:45 to 2:45	230
2:45 to 3:45	225
3:45 to 4:45	225
4:45 to 5:45	232½
5:45 to 6:45	237½
6:45 to 7:45	235½
7:45 to 8:45	222½
8:45 to 9:45	220
9:45 to 10:45	222½
10:45 to 11:45	222
Total	4,754

The gas that accompanies the oil tested at the rate of 13,000,000 feet of gas a day when the well was first opened and it declined to about 6,000,000 feet at the end of the test when the well was shut in. The discovery well in the Oklahoma City Field made 4,982 bbls. on its first 24-hour gauge.

An important factor to be considered in this area is the two sands that have been found productive. The first sand is the Layton from which the Eason Oil Co.'s well is producing at approximately 4,800 feet. This well was not carried to the Wilcox sand horizon.

Higher Than July Nominations

The estimated crude oil demand from the state fields for August and September is higher than the July nominations. Some of the purchasing companies say they can not get their requirements at this time. The total nominations for

August were fixed at 601,569 bbls. daily, while some of the purchasing companies indicated there might be changes in the September demand. Estimates for the State from the various pools are as follows:

Pool—	August	Sept.
Wilcox, Okla. City	181,021	180,811
Simpson, Okla. City	70,540	70,050
Fault Line, Okla. City	677	677
Class B	140,712	140,712
Strippers	180,000	180,000
Lucien	8,000	8,000
Keokuk Falls	1,000	1,000
Tatums	10,500	10,500
Fish (Cromwell)	3,255	3,255
Fish (Simpson)	500	500
Sasakwa	1,350	1,350
E. Earlsboro	4,014	4,014
Total	601,569	600,869

The total nominations for the Oklahoma City Field for August were 252,238 bbls. daily and for September 251,538 bbls. The purchasing companies nominated 249,631 bbls. from the Oklahoma City Field during July, but the Corporation Commission allowed only 210,677 bbls.

A new pool was listed when the Mid-Continent Petroleum Corp. made a nomination for the areas in Sections 6-6-5 and 31-7-5, in Pottawatomie County, which heretofore has not been classified, and asked for 780 bbls. a day. This is believed to be the entire output of these wells, some of which are showing water.

Representatives of the purchasers asserted that none of the crude would be sent to storage, although they had been withdrawing crude oil for the last several months. The Carter Oil Co. and Stanolind Crude Oil Purchasing Co.'s representatives said they were not able to get their full oil demands in the State, because of restrictions in areas where they purchase, on account of the refusal of producers to sell at the present market price.

Messer Area Active

The Messer area north of Oklahoma City Field is active. The Cromwell-Franklin Oil Co. and Wirt Franklin Petroleum Corp. and others' No. 1 Ketchum, C NE SE Section 32-14-3w, was a location with material moving in. Cellar was being dug and it was expected to be in readiness in a few days. This test is about three-quarters of a mile west of the Mid-Kansas Oil & Gas Co.'s No. 1 Messer, in the same section, which was completed in 1930 and has been shut in since.

In the southeastern part of the county, the Mid-Continental Co.'s No. 1 Edwards, C SE SE Section 19-11-1, near Newalla, has resumed drilling operations. It had landed and cemented surface casing at 285 feet several weeks ago.

The Oklahoma City Field in June reached a new peak in production and oil shipments for the last two years, according to the umpire's figures. June production totaled 6,258,177 bbls., or a daily average of 208,608 bbls. Oil shipments from the field for June totaled 6,068,802 bbls., a daily average of 202,293 bbls. and an increase of 2,151,316 bbls. over May. These increases are due to the larger nominations made since the crude oil prices were raised, breaking the producers' strike.

The oil in storage on July 1 totaled 1,228,743 bbls., an increase of 188,375 bbls. over the previous month.

The total allowable for July from the Oklahoma City Field is 9,219,396 bbls., the highest in the history of the field and comparing with a net allowable of 7,623,370 bbls. for June.

A summary of the field shows 905 producers with a four-hour potential of 1,179,460 bbls. recently completed. On June 1 the overproduction was 963,452 bbls. and the underproduction 2,467,598 bbls. On July 1 the overage totaled 1,231,135 bbls. and the underage was 2,596,328 bbls.

Big Offers Not Repeated

The fabulous offers made in the past for leases in the Riverside Park area, an extension to the Oklahoma City Field, were not repeated when the city council opened bids for the leasing and development of the park tract last week.

Some of the bidders talked in figures that were up in the millions but payment was to be made in oil produced from the property. The largest cash offer, $151,101, was made by Knox Garvin. The Skelly Oil Co. offered only $6,565 in cash, with an additional $112,565 to be paid in oil out of 26 per cent of the seven-eighths interest going to the leaseholder.

All of these offers included the regular one-eighth royalty. Knox Garvin also made an alternative bid of $75,101 in cash and $125,000 out of one-fourth of the oil produced from the leaseholders' interest. He also made an offer of a one-fourth interest in the well to the city until it had received $350,000.

The Denver Producing & Refining Co. bid a bonus of $666,666.66 to be paid out of an eighth interest. The Gulf Production Corp. offered $1,550,000 to be paid from three-sixteenths of the leaseholders' interest. Half of the oil from the first 1,000,000 bbls., a fifth of the next 5,000,000 bbls., and an eighth interest thereafter was offered by the Drillers Trust Co.

The Phillips Petroleum Co.'s bid was for a half interest in the production after it had been reimbursed for the drilling expense. G. G. Travis offered a bonus of $150,000 to be paid out of three-sixteenths of the leaseholders' interest. H. F. Wilcox Oil & Gas Co. made a bid of a quarter interest after it had been reimbursed for the drilling expense.

Under the law the council was required to let bids lie over until its next meeting, unless a special meeting should be called 48 hours after the bids were opened.

People to Vote on Drilling Zone

Members of the city council decided to give the people permission to vote on the question of extending the oil drilling zone. A vote may be taken August 15 at a special election.

The Lucien Field in Noble County, apparently has been defined to the southwest. The Shell Petroleum Corp.'s No. 1 M. Farr, C NE SE, Section 19-20-2w, is shut down at 5,416 feet with approximately 2,000 feet of water in the hole. It is believed to define the trend to the south as it is only a half mile south of a 5,000-bbl. well, and it is a quarter of a mile south of the unitized block.

The well had water in the Wilcox sand and it was plugged back to the Simpson series and acidized, without results. Geologists are undetermined whether there is a deep syncline or a fault on that side of the field.

The Champlin Refining Co.'s No. 1 Graves, SW cor. NW NE, Section 21-20-2w, is the third dry hole in the Lucien Pool, in Noble County. It found water in the Wilcox sand at 5,209-15 feet. This test is east of the discovery well in the field which was drilled in Section 17-20-2w. The test probably will be plugged back to the shallow horizons and a test made for production. The other dry holes drilled in the area to the Wilcox sand include the Sinclair Prairie Oil Co.'s No. 1 Jerome, in SW cor., Section 15-20-2w, and Shell Petroleum Corp.'s No. 1 M. Farr, in Section 19-20-2w.

Stanolind Oil & Gas Co. and Continental Oil Co.'s No. 1 Boley, C SW NW, Section 16-20-2w, was drilling in Viola lime at 5,100 feet and carrying 3,500 feet of oil in the hole from a shallow sand.

Carter County

Samedan Oil Corp.'s No. 1 Garner, SE cor. NE NE Section 25-1s-3w, is a location. Same company's No. 2 Garner, SW cor. NE NE Section 25-1s-3w, is a location.

Caddo County

W. L. Miller's No. 1 Garner, SE cor. SW Section 36-6-10w, made 10,000,000 feet of gas from 3,382-97 feet.

Creek County

Comail Oil Co.'s No. 3 Brewer, C W half SW NE Section 8-18-7, is a rig. Dot Oil Co.'s No. 34 Yohola, CEL SE NW Section 8-18-7, made 200 bbls. from 2,446-2,509 feet.

Hughes County

Buchner and others' No. 1 Perkins, C W half SW SW Section 7-5-9, is a rig. Royce and others' No. 2, C N half NE SW Section 22-7-8, was spudding. Gilcrease Oil Co.'s No. 1 Thompson, NW cor. SE Section 34-7-8, was abandoned at 1,391 feet.

Garfield County

Continental Oil Co.'s No. 1 Thompson, NW cor. SW SW Section 7-24-4w, was abandoned at 6,580 feet.

Jefferson County

O. W. Beck's No. 5 Seay, NW cor. NE SW SE Section 34-6-5w, was abandoned at 1,760 feet. Hobbs and others' No. 1 Burnett, NE cor. SE SW NE Section 32-5-5w, was abandoned at 2,270 feet.

Kay County

B. Lewright and others' No. 1 Leseman, SW cor. NE SE Section 4-28-2, is a location.

Logan County

Continental Oil Co.'s No. 1 McConnell, C SE SE Section 28-17-4w, is a location. Gypsy Oil Co.'s No. 1 Walker, C NE NE Section 33-17-4w, is a location.

Lincoln County

J. Garfield Buell's No. 1 Smith, NW cor. SE Section 26-16-6, is a location.

Marshall County

Neff and others' No. 3 Dilley, NW cor. SE SE Section 30-5-6, was spudding.

Oklahoma County

W. E. Houston and others' No. 1 Ketchum, NW cor. NE SE Section 32-14-3w, is a location. Refiners Production Co.'s No. 1 Burroughs, SE cor. SW NW Section 10-11-3w, made 1,638 bbls. in 19 hours from 6,351-6,499 feet.

Osage County

Peters and others' No. 3, NW cor. SW NE Section 24-24-7, is a location. Lewis Production Co.'s No. 1, NW cor. NE Section 33-24-7, is a location. Texas Co.'s No. 2, NW cor. SE SW SW Section 25-24-8, an old well drilling deeper, is cleaning out. S. W. Penny's No. 7, Section 15-24-8, was drilling at 700 feet.

Pottawatomie County

Eason Oil Co.'s No. 1 Swart, SE cor. NW Section 2-8-4, is a location. Dingee and others' No. 1 Thomas, SE cor. NE NE Section 9-7-4, is a location. P. Murphy's No. 1 Hines, NE cor. SE NW Section 9-7-4, is a location. Hurt and others' No. 1 Deathridge, SE cor. NE SE Section 20-7-4, is a location.

Seminole County

Sinclair Prairie Oil Co.'s No. 1 Terney, SE cor. Section 2-11-6, is a location.

Concrete Floors Require Careful Workmanship

(Continued from Page 10)

the same finish after it has been steel which are coarse aggregate right at the troweled. Note the small dark spots surface of the floor. This is the type of finish that is dense and wear resistant, free from maintenance cost and durable.

The difference between the properly constructed concrete floor and one that has been improperly made is quickly apparent by cutting a section through the wearing course. A correctly proportioned floor topping placed in the manner herein recommended will show a uniform distribution of coarse aggregate particles through the entire depth of finish and right up to the wearing surface. Such a section is shown in Figure 7. There is no film of laitance or weak mortar at the surface. When thoroughly cured to develop the strength of the cement paste binder the topping is dense and strong. There can be no dusting or crazing as there is no fine material at the surface. A concrete floor finish of this type will meet every traffic demand placed upon it. Such construction insures years of satisfactory service.

Sand and Cement Top

Although everyone has seen cement and sand mortar toppings such as have frequently been used, a few illustrations of them will make clear the reasons why they should be avoided. No matter whether the floor is for so-called heavy duty or even for relatively light traffic, these mortar toppings are not desirable. Figure 8 shows such a mortar mixture in which there are no large particles of durable aggregate of the kind to resist wear. Because it is made of fine material only, a mortar topping works easily and a very smooth finish can be produced. For this reason it has been all too commonly used without thought as to its wear resistant qualities. The economy of properly proportioned and correctly constructed floors is lost if weak mortar toppings are used. The labor cost of placing a mortar topping may be slightly less than that for a 1:1:2 concrete finish but the maintenance charges will soon offset any apparent saving.

Cause of Crazing

Crazing of the surface of a concrete floor such as shown in Figure 9 is evidence of shrinkage which often results from the use of mortar toppings. The large percentage of sand and the absence of coarse aggregate in such finishes necessitate a high water cement ratio which is one of the fundamental causes of shrinkage. To avoid a high water cement ratio with a mortar topping, a mixture rich in cement must be used but this also results in excessive shrinkage. The solution of the problem is in the use of the recommended concrete mixture of one part cement, one part sand and two parts of coarse aggregate mixed with not more than 5 gallons of water per sack of cement. Overtroweling of the finish while still plastic, dusting on sand or cement to induce premature drying and inadequate curing also induce crazing.

Just as Figure 7 shows why a properly made concrete floor finish is wear resistant so does the section shown in Figure 10 illustrate the cause for the unsatisfactory wearing quality of a mortar topping or one that has had a dust coat of fine material spread over the surface. A layer of weak material is revealed at the surface of the floor. Overtroweling has caused the finest particles in the finish to rise to the top. This surface skin has little strength. It shrinks badly causing crazing, followed by dusting and disintegration under traffic.

Week of Curing

There is a final operation in floor construction that has only been briefly mentioned but it is of the greatest importance in assuring the success of the floor finish. It is curing. It is not sufficient simply to proportion a concrete floor topping correctly and place it in the proper manner only to let it dry quickly; by so doing the builder loses much of the value of the other two steps well done. The floor must be kept wet for at least one week and preferably longer to develop the strength and durability of the concrete. If it is permitted to dry quickly the development of the desired qualities in the finish will be greatly retarded or entirely stopped.

Lack of adequate curing is as much, if not more, responsible for defective concrete floor finishes than any other cause. All the care exercised in proportioning, placing and finishing is defeated without curing. Do not neglect curing.

Apply water to the concrete as soon as possible after finishing without marring the surface. Frequent sprinkling or covering with wet sand or burlap constantly kept moist are easy and inexpensive ways of providing curing. Covering the new finish with an impregnated waterproof paper will afford excellent curing if the joints are tightly sealed to prevent evaporation. Each additional day of curing contributes greatly to the durability of concrete floors.

DENIED SEPARATE TRIAL

AUSTIN, Tex., July 25.—First of the motions of oil companies in Attorney General Allred's suit based on the petroleum marketing code, that of Sinclair Refining Co., for severance and separate trials, was overruled by district court. The general trial has been set for October 2.

Finney County, Kansas, Site of Community Test in Which Five Companies Are Interested

By W. A. SPINNEY
Staff Correspondent, Kansas Fields

The week's developments in Kansas included announcement of a new wildcat location in Finney County, keeping the western part of the State in the limelight; revival of drilling in the Valley Center district of Sedgwick County in an effort to extend production in that area, and a statement from the state umpire that McPherson Couny fields had yielded more oil in the first six months of 1933 than in any like period since oil was discovered there.

The Finney County wildcat, No. 1 Smith, C SW SW Section 2-23-9w, is a community test with the following five companies interested: National Refining Co., Atlantic Oil Producing Co., Phillips Petroleum Co., Continental Oil Co. and Kuns Brothers. These companies pooled their acreage and made a unitization agreement.

The nearest oil producer to the Finney County location is the Continental Oil Co.'s No. 1 Aldrich, NE cor. SE Section 7-18-25w, Ness County, about 40 miles northeast. It is producing from the Siliceous lime at 4,430 feet.

The first producer in Finney County was a gas well, Meyers and Denham's No. 1 Brown, which had an initial production of 5,500,000 feet of gas a day from the Colorado shale at 2,744 feet.

The area surrounding the new location has been core drilled and it is believed to be located on a structure. If oil is found on this site it will be the first oil produced in the county.

The Valley Center district is having new play with the announcement of a location by Faulkner and others' No. 1 Underwood, C SW SW Section 23-25-1w, Sedgwick County, about 3 miles north of the townsite of Valley Center. This test offsets the Sinclair Prairie Oil Co.'s No. 1 Cross, a wildcat well producing from the Kansas City lime. The No. 1 Cross was drilled several years ago by O. J. Connell and others and the Sinclair Prairie Oil Co. later took over the property and is now operating it.

Mabee-Nikkel Area Extended

The producing area of Mabee-Nikkel in McPherson County was extended by W. C. McBride, Inc.'s No. 2 Koehn, NW cor. NE Section 33-21-3w, which found big production in the Hunton lime. No production tests have been made, but the well is estimated to be good for 1,000 bbls. a day. Oil rose 2,000 feet in the hole in two hours. The Hunton lime was found at 3,441-43 feet. The same company's No. 3 Schmidt, NW cor. NE NE Section 30-22-3w, in the Hollow Field in Harvey County, made 30 bbls. of oil an hour on the swab. It is producing from the Wilcox sand at 3,542-59 feet. It will be put on the pump for a production test in a few days.

The Dickey Oil Co.'s No. 2 Williams, SE cor. NW Section 20-19-2w, in the Ritz-Canton Field, was making a pumping test and was reported making 12½ bbls. an hour or a daily average production of 300 bbls. The Viola lime was treated with acid after the hole was drilled deeper from 3,380 feet to 3,394 feet.

In the Hollow Pool, in Harvey County, one new location was made in the southern part of the field and two were made in the northern part. W. C. McBride, Inc.'s No. 4 Schmidt, in Section 30-22-3w, is a twin to the same company's No. 1 Schmidt. Murray, McComb and others' No. 3 Dyck, SE cor. NE SW Section 8-22-3w, and No. 4 Dyck, NE cor. SW Section 8-22-3w, are new locations. Developments at these locations are expected to be started in a few days.

Phillips Petroleum Co.'s No. 2 Wiles, NE cor. SE NE Section 25-19-2w, is a new location in the Ritz-Canton Pool, McPherson County. Rotary tools will be used. The site offsets a Viola lime well.

Clum, Washoma Oil Co.'s No. 1 Nelson, NW cor. SE NW Section 12-18-4w, a wildcat test 9 miles northwest of the townsite of McPherson, found the Viola lime at 3,428 feet. The casing will be underreamed to the top of the lime before it is drilled deeper. No showings of oil or gas have been found in the test, but in many cases oil is not found in the top of the formation.

Production Record Broken

According to the state umpire the oil produced during the first six months of 1933 in the McPherson County oil fields totaled 6,272,356 bbls., the largest quantity of oil ever produced in the McPherson County fields in any six months' period since production was discovered about four years ago. The average monthly production from that county is in excess of 1,000,000 bbls. monthly. The production by months is as follows: January, 670,470 bbls.; February, 913,885 bbls.; March, 1,303,383 bbls.; April, 1,189,954 bbls.; May, 1,062,486 bbls., and June, 1,132,178 bbls.

Three new locations were staked in the early part of the week in McPherson County, two in the Ritz-Canton Field and the other in the Voshell Field, bringing the total to 27 tests in McPherson County so far this month.

One of the Ritz-Canton locations is the Lario Oil & Gas Co.'s No. 3 Law, SE cor. NE NE, Section 24-19-2w. It is the east offset to W. C. McBride, Inc.'s No. 1 Lovett, a Viola lime well. The second is the Lario Oil & Gas Co.'s No. 5 Miller, SE cor., Section 24-19-2w, which is a northwest diagonal offset to Phillips Petroleum Co.'s No. 6 Anderson.

The Voshell Field test is Shell Petroleum Corp. and others' No. 3 Neufeldt, NE cor. SW SE, Section 16-21-3w. This location is the south offset to the location of Stanolind Oil & Gas Co. and others' No. 5 Zerger.

Gasoline Pipe Line Completed

The Sinclair Prairie Oil Co.'s new 4-inch gasoline pipe line from its plant in Coffeyville, Kans., to the Great Lakes Pipe Line Co.'s main line was completed recently. The construction work was under the direction of Truman & Smith Construction Co. The pipe line is approximately 14 miles long. This is the company's second refinery to be connected to the Great Lakes pipe line, the other plant being the Sand Springs refinery in Sand Springs, Okla.

The Sunflower Refining Co. of Hutchinson, Kans., is now shipping oil through its new pipe line system to the Chase townsite. This extension pipe line was recently completed to make connection with its main line in order that the crude from this area can be handled direct to the refinery about 50 miles away.

The Sunflower Refining Co. is controlled by Slick, Pryor & Lockhart, Inc., Darby Petroleum Corp., Ainsworth Brothers and C. L. Brown. This company also has a pipe line tapping a number of pools in northwestern Rice County and southwestern Ellsworth County, where these same interests have producing properties and a number of undeveloped acres.

Not a Dry Hole in Field

The Burrton area in Reno County, west of the townsite of Burrton, is believed to be the largest oil pool developed in Kansas without a dry hole. The district has been proved for about 3½ miles north and south and nearly 3 miles east and west and from the southwest corner of the area to the northeast corner it is about 4 miles. In this area there has not been one failure. The wells are producing from the chat formation and most of them have a large flow of gas. In the Olson Oil Co.'s No. 1 Goering, C NE SW Section 26-23-4w, the largest gas well ever completed in Kansas was found, with an open flow of approximately 91,000,000 feet of gas a day. It was tested a short time ago months after it was completed. There are also three other large gas wells in this area and a number of wells that make gas along with the oil.

All are flowing wells in this area except the Olson Oil Co.'s No. 1 E. Krehbiel. It is believed the casing in this well was landed too deep to allow sufficient gas to come into the hole to flow the oil.

In the area there are a total of 32 producing wells, owned by the following companies: Olson Oil Co., 24 wells; Skelly Oil Co. and Gled Oil Co., 2; Barnsdall Oil Co., 1; Sinclair Prairie Oil Co., 3; Derby Oil Co., 1; Gypsy Oil Co., 1.

Under proration these wells are allowed to produce around 1,500 bbls. of oil a day and at this time most of the oil is going to the Skelly Oil Co. None of the gas is being marketed at this time. Some of the wells are connected to the Cities Service Co.'s pipe lines.

The only wells now being drilled are two by the Olson Oil Co., but others are expected to start in a short time.

A well drilled in the Goodrich Pool, in Sedgwick County, a number of years ago was increased by the use of acid. The well is Bonner and others' No. 1 Jackson, SW cor. Section 15-25-1, which was producing around 15 bbls. a day when first completed in the Kansas City lime. Following a treatment with acid, its production increased to almost 100 bbls. daily and after a period of 40 days it has settled to around 40 bbls. daily.

The daily average production of the principal pools in the State for the week ending July 22 was as follows:

Pool—	Week ending July 22	Previous week
Hollow	15,470	16,125
Ritz-Canton	23,445	25,985
Voshell	7,310	6,970
Sedgwick County	9,780	9,580
Mabee (Nikkel)	8,845	8,985
Ellsworth County	2,411	2,550
Barton County	375	382
Rice County	5,816	4,715
Reno County	2,182	2,315
Stafford County	185	195
Total	75,819	77,802
Others	52,741	54,598
Total State	128,560	132,400

Cowley County

M. B. Armer's No. 1 Bowman, SE cor. NE SW Section 2-32-4, is a rig.

Elk County

Austen's No. 1 Wade, C NE NE Section 9-29-12, was abandoned at 1,962 feet.

Ellsworth County

Aylward and others' No. 7 Stratman, NW cor. SW SE Section 1-17-10w, is a

(Continued on Page 125)

Wildcat Operations in Kansas

(Descriptions are East unless marked otherwise)

BARTON COUNTY

Company, farm and location—	Remarks:
Helmert & Payne's No. 1 Everhigh, C SW SE Sec. 13-18-13w	Rig.
Rankin et al's No. 1 Sooeg, C SW NE Sec. 34-16-12w	Drlg. 3,504 ft.
Skelton et al's No. 1 Ott, C SE SE Sec. 16-19-14w	O.W.D.D.; T.D. 3,607 ft.; C.O.

BUTLER COUNTY

Hartman et al's No. 1 McCann, SE SW NW Sec. 7-25-3	Drlg. 1,050 ft.
Marylyn Oil Co.'s No. 1 Harsh, NE SW Sec. 33-23-8	Drlg. 1,300 ft.

COWLEY COUNTY

E. Yarnell's No. 1 Speer, SE NE NE Sec. 31-33-6	Drlg. 1,400 ft.

ELK COUNTY

Austin et al's No. 1 Wade, C NE NE Sec. 9-29-12	Abd. 1,962 ft.

ELLSWORTH COUNTY

Rex Etnyre's No. 1 Arnsman, C SW SW Sec. 10-15-7w	Rig.

GEARY COUNTY

Ledauris' No. 1 Fechner, C SE NE Sec. 27-13-8	Drlg. 950 ft.

GRAHAM COUNTY

Schleimeyer et al's No. 1 Smith, SE Sec. 24-8-25w	Fishing 4,180 ft.

GREENWOOD COUNTY

Chas. Reser et al's No. 1 Hull, NW SE Sec. 8-26-9	Abd. 2,285 ft.
Reeser & Chriswell's No. 1 Sallyards, C SW SW Sec. 28-25-9	Spud and abd.
Wright's No. 1 Madren, SW SE SW Sec. 29-22-12	Machine abd.

KINGMAN COUNTY

Garden et al's No. 1 Unknown, Sec. 11-27-7w	Drlg. 3,000 ft.
D. R. Lauck et al's No. 1 Church, SE SW NE Sec. 10-28-6w	Drlg. 200 ft.

MARION COUNTY

Hutchinson Oil & Gas Co.'s No. 1 Miller, NW cor. Sec. 6-17-3	Drlg. 1,950 ft.

McPHERSON COUNTY

Clum et al's No. 1 Nelson, C NE NW Sec. 12-18-4w	Drlg. 3,400 ft.
Sever and Hessman's No. 1 Scrag, S½ SE Sec. 22-19-4w	Rig on ground.
Gaume & Maxwell's No. 1 Goering, NE SE SW Sec. 24-23-2w	Rig.
Investors Mineral Dev. Co.'s No. 1 Kaufman, SE Sec. 35-21-3w	Rig.
Roth & Farout's No. 1 Swanson, NE SW NE Sec. 13-19-3w	Rig.

NORTON COUNTY

Moody Seagraves' No. 1, NW Sec. 24-2-22w	Drlg. 700 ft.

PRATT COUNTY

Ninnescah O. & G. Co.'s No. 1 Hardesty, SW SE SE Sec. 28-27-11w	Drlg. 4,427 ft.

RENO COUNTY

Roth & Farout's No. 1 Yoder, C NW NW Sec. 15-24-5w	C.O. 325 ft.

RICE COUNTY

Langston et al's No. 1 Wells, NE SE Sec. 4-20-9w	Drlg. 3,100 ft.

ROOKS COUNTY

Kruger's No. 1 Rathburn, SE NW SW Sec. 14-9-16w	Rig.

SALINE COUNTY

SUMNER COUNTY

Deal O. & G. Co.'s No. 1 Tompkins, SW cor. Sec. 26-33-1	Fishing 3,730 ft.

WOODSON COUNTY

F. Field's No. 1 Munson, SW NE SW Sec. 9-25-14	Drlg. 500 ft.

Result of Deep Test in Claiborne Parish, La., Is Disappointing; Arkansas Completions Dry

By D. H. BANCROFT
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., July 24.—Results of the United Gas Public Service Co.'s deep test in Claiborne Parish, No. 1 Meadows, Section 13-21-5, at 6,610 feet, which was holding major attention at the first of last week were disappointing, showing salt water, with gas, after coring what was reported as a fairly well saturated sand. However, it is still coring—at 6,618 feet in streaks of red and gray sand. Whether it is carried on to the scheduled 7,000 feet remains to be seen—depending altogether on what the next few cores show. The other "hot" well in this territory, E. T. Oakes' No. 1 Bryant, Section 30-13-15, DeSoto Parish, at Longstreet, was still shut down though it has been reported due to drill in from time to time during the past 10 days. Total depth is 4,614 feet with 6⅝-inch cemented at 4,454 feet. Sabine Production Co.'s No. 1 Whitney Corp., Section 4-19-13, Sabine Parish, 1¼ miles northwest of production, reported making 100 bbls. of oil with salt water and gas at 3,067 feet in sandy lime, is now reported flowing 40 bbls. of oil, with salt water. To make things look better for Converse, O. G. Golden and others' No. 1 Cranford, Section 20-9-13, completed as a 300-bbl. producer at 1,852 feet, is now reported making 500 bbls. Converse's pipe line runs for the second week averaged 225 bbls.

George Greer and others' Conroe-Jackson trend test in Catahoula Parish, No. 1-B Louisiana Central Lumber Co., Section 2-9-6, was dry at 3,016 feet and is arranging to rip the bottom joint of casing cemented at 2,735 feet and test again. Location is a few feet west of No. 1 completed June 14 at 2,744 feet making 15,000,000 feet of gas with 5,000 bbls. of salt water. It blew in unexpectedly with part of the drill stem in the hole, bridged and was abandoned. The present test checked with older wells 4 miles south that made the same sort of shows, getting the top of the Wilcox at 2,952 feet.

To Drill Deep for Gas

United Gas Public Service Co. is reported leasing several hundred thousand acres in Calhoun, Bradley, Ashley and Chicot Counties, in the southeast corner of Arkansas for a series of deep tests for gas, paying a nominal rental with the privilege of renewing what they want to keep as the result of their exploration at a slightly higher figure. Several "deep" tests in the red beds have been drilled in this area during the last five or six years and it also has been gone over with geophysical instruments. The company also is busy in Monroe proven territory, and in the Elm Grove-Sligo district of Bossier Parish and has recently leased more or less acreage just south of Shreveport in what is more or less loosely defined as the old Cedar Grove gas district of Caddo Parish. J. F. Morrissey of Fort Worth has taken a 5,000-acre block in the southwest corner of Sabine Parish for a 1,600-foot test to the Urania pay (Wilcox) and has derrick up on the Wyatt Lumber Co. land, NW NW Section 13-4-12, a mile northwest of a dry hole drilled three or four months ago.

Eight completions were listed during the week, and 12 new operations. Louisiana territory has one gas well in the Sligo district of Bossier Parish; a 100-bbl. producer in Zwolle, and one abandoned location in Converse area of Sabine Parish. All Arkansas completions were failures, an abandoned location in Prairie County, two dry holes in Miller County, and one each in Lincoln and Little River Counties. The new tests were divided nine in Louisiana and three in Arkansas. Caddo Parish reported two, Converse and Zwolle three each and a wildcat in Sabine Parish. Two of Arkansas' new tests are in Miller County and one in Lafayette.

United Gas Public Service Co. completed No. 1 Schnitt, Section 14-17-12, Bossier Parish, making 1,250,000 feet of gas at 640 pounds from 2,525 feet—deepened from 1,965 feet, where it also was a small gasser after deepening from the shallow horizon where it had been a 24,000,000-foot producer. Crescent Drilling Co.'s No. 1 Billbray, SE SW Section 29-8-11, Zwolle district of Sabine Parish, flowed 100 bbls. through tubing from 2,299 feet. Henry Rockmill's No. 1 A. M. Cassell, NE NE Section 35-9-14, Converse area of Sabine Parish, is an abandoned location. His Patrick lease, NE SW Section 21-9-13, and the well drilling on it has been taken over by C. L. Nixon. It has been shut down at 1,100 feet since February. Location is half a mile northeast of Evans Brothers' No. 1 Cranford in Section 20. John B. Watkins abandoned No. 2 McGehee Planting Co., NE SW Section 5-8-7 Lincoln County, Arkansas, as a dry hole at 1,300 feet. No. 1 on the same lease, drilled by Lawrence B. Cook, was abandoned at 4,430 feet without a show anywhere along the line that warranted hopes for production of either oil or gas. K. E. and W. N. Merren's No. 1 Taafe, Section 25-12-32, Little River County, 3 or 4 miles west of a shallow gasser, was abandoned after testing 2,700 feet of salt water in 10 minutes from 2,886-2,927 feet.

Miller County's Showing Poor

C. H. Murphy and others' No. 1 Mann, SW SW Section 2-16-26, Miller County, Arkansas, was dry and abandoned at 3,505 feet. Regarded by some as the last chance for an extension of the small producing area in Miller, the failure of this test, 1½ miles southeast of production, would seem to seal the fate of that particular locality as other tests in all other directions from the small group of producers have been failures at various depths from the 2,800-900 feet producing level to 4,000 feet. This particular well missed the sand entirely. Sam Riggs and others' No. 1 Boyce, SW NE Section 12-15-27, 6 miles northwest of production, was dry and abandoned at 2,940 feet, also having missed the sand and made no test of anything encountered. Powell Creek Oil & Gas Co.'s No. 1 Kloss, NE SW Section 3-4n-6w, Prairie County, was abandoned as a derrick with half the rig up.

Calatex Oil & Gas Co. has derrick up for No. 1 G. M. Agurs in Section 9-16-16, Bethany gas district of Caddo Parish and C. G. Gibbins has location for No. 1 Burglass in Section 15-21-16, west of Lewis in the old proven Caddo Field. Robertson Drilling Co. staked location for No. 1 Bowman-Hicks' J. W. Tatum, NW NW Section 23-9-13, 2 miles east of production in Converse; Homer Tyson has derrick up for No. 1 G. W. Hough in the SW NW Section 31-9-12, 4 miles southeast of production, and J. B. Williams made location for No. 1 J. W. Tatum, NW SE Section 32-9-13, 2 miles south of production. Pugh-Hickman Drilling Co. made location for No. 1 Stille, SE SE Section 16-7-11, Zwolle district of Sabine Parish; A. L. and E. J. Waller are rigging up on No. 1 J. A. Greer, SE NE Section 24-8-12, Zwolle, and C. T. Ruffin has rig up for No. 4 Lilley in the NW NW Section 8-7-11. Paul G. Benedum has rig up for No. 1 Hanson, SW NW Section 25-19-24, Lafayette County, Arkansas, 6 miles north of Carterville production in Bossier Parish, Louisiana, which is understood to be scheduled for a deep test to around 4,000-4,500 feet on a block of several thousand acres. Duluth-Arkansas Oil Co. has derrick up for No. 2 Beck, SE SW Section 34-15-26, Miller County, a quarter mile southeast of their No. 1 on the same lease that had 150 bbls. initial production and Frank W. Rowe has location for No. 1 J. H. Dominick, NW NW Section 21-15-26, 3 miles north of production.

Pipe Line Runs

Daily average runs from the several pools were:

NORTH LOUISIANA

	Bbls.
Caddo light	4,690
Caddo heavy	1,490
Converse	225
Cotton Valley	500
DeSoto-Red River	1,590
Elm Grove	310
Haynesville	3,800
Holly	205
Homer	2,680
Pleasant Hill	235
Sarepta-Carterville	810
Urania	2,500
Zwolle	7,285
Total	26,320
Last week	26,082
Decrease	162

ARKANSAS

Champagnolle	1,330
El Dorado	2,600
Lisbon	380
Miller	100
Nevada	500
Smackover light	2,560
Smackover heavy	22,100
Stephens	460
Urbana	1,310
Total	31,350
Last week	30,085
Increase	1,265
Both states	57,670
Last week	56,167
Increase	1,503

Wildcat Operations in Louisiana-Arkansas

(Rotary operations unless otherwise designated)

North Louisiana

AVOYELLES PARISH

Company, well, farm name, section and block— Remarks:

Gary Prevenson's (was Bud Harrell et al) No. 1 Haas, 330 ft. N and W, SE cor. SW SW Sec. 9-1s-3e ..... Derrick.

BOSSIER PARISH

J. A. King et al's (was A. W. Phillips, tr.'s) No. 1 Oden, 300 ft. W, 150 ft. N, SE cor. NW NW Sec. 4-18-13 ..... S.D. 1,704 ft.

Dr. C. R. Reed, tr.'s No. 1 C.J.&B., Sec. 18-16-11 ..... Rigging up.

B. A. Sherrell, tr.'s No. 1 fee, NE NW NW Sec. 18-19-11. Drlg. 1,408 ft.

CADDO PARISH

J. B. Hutchinson, tr.'s No. 1 Story Phillips, 330 ft. N and E, SW cor. SW NE SE Sec. 28-16-13..... Rig up.

J. T. Humphrey et al's No. 1 Powell, 330 ft. N and E, SW cor. NW SE Section 14-19-15 ..... Derrick.

John F. Kerper's No. 1 Barron, 350 ft. N and W, SE cor. NE SE Sec. 27-16-14 ..... Began drlg. July 12; 12½-in. 120 ft; drlg. 1,425 ft.

A. D. King, tr.'s No. 1 Roach, 641 ft. E, 375 ft. N, SW cor. SW SW Sec. 4-14-16 ..... Derrick.

CATAHOULA PARISH

George Greer et al's No. 1-B La. Cen. Lbr. Co., Sec. 2-9-6, 2,045 ft. N, 1,930 ft. W, SE cor. ..... Tested dry 3,016 ft; arranging retest.

CLAIBORNE PARISH

United Gas Public Service Co.'s No. 1 Meadows, approximately 100 ft. S, center E½ E½ Sec. 13-21-5 .S.W.; show gas; S.D. 6,642 ft.

DE SOTO PARISH

Bailey Gantz et al's No. 1 Jenkins, NW cor. SE SW Sec. 35-13-12 ..... Tested S.W.; W.O. 3,069 ft.

J. H. McKenzie's (was P. B. Dyer's) No. 2 B. F. Jenkins, 330 ft. N and E, SW cor. NW SW Sec. 35-15-12 Rig up.

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NORTH LOUISIANA

S. P. Borden and others' No. 1 Pardee, SW NW Section 35-16-8, Bienville Parish, tested salt water at 3,503 feet and probably will be abandoned. The program for development of this block, however, calls for three more shallow tests. A. W. King's No. 1 Oden, NW NW Section 4-18-13, Bossier Parish, 6 miles north of Shreveport, is shut down at 1,704 feet after bailing and swabbing a show of oil at that depth. The well, scheduled to go 3,000 feet, is on a 4,000-acre block. H. I. Morgan's No. 2 Smith, Section 22-19-11, on the south flank of the Bellevue Dome of Bossier Parish cored a water sand at 5,108-15 feet. Structurally, it is the deepest hole yet drilled in this territory. Louana Oil & Gas Co.'s No. 2 Sharpe, NE NW Section 10-18-16, Blanchard gas district of Caddo Parish, was dry on drill stem test at 2,675-2,743 feet and was coring. Pyramid Oil & Gas Co.'s No. 1 P. A. Sharpe, Section 3-18-16, same territory, was dry on drill stem test at 2,680-2,730 feet and also was coring. E. M. Self has taken over No. 1 J. A. Wagner, NE SW Section 5-12-14, DeSoto Parish, and is fishing for junk, total depth 2,846 feet (corrected). Location is 8 miles west of Mansfield and the well was begun by Warren & Craig who later transferred it to Carrol & Holden. Winters and others have taken over the old Keatchie Oil & Gas Co.'s No. 1 Smith, SE SE Section 31-14-15, 6 miles north of the Oakes deep test at Longstreet, begun by Donely & Chastain and by them transferred to Stewart-Duffy Oil Co., who drilled it to 2,470 feet, and plan to make a test of a show in the Tokio developed by the former owners and, failing there, make a deep hole of it. E. M. Thomason's No. 1 T. J. Crichton, SE SE Section 17-13-10, in the old Lenzburg-Crichton proven area of Red River Parish, set 8-inch with packer at 940 feet for a test of the Naca-

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Pure Oil Co.'s Stewart Well in Louise District Expected to Open Another Coastal Field

By NEIL WILLIAMS
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., July 24.—Trading in royalties and in leases outside the blocks held by the larger companies in the Louise district of southern and western Wharton County is in progress on the strength of Pure Oil Co.'s wildcat on the Stewart tract in the Morris & Cummings Survey 25. This well is running a string of 9⅝-inch casing to test a sand at 5,963-71 feet, in which a drill stem test made last April indicated a producer could have been made.

This is the first test drilled at Louise, a geophysically discovered prospect which Pure Oil Co. has had on the shelf since 1928, and completion of a well means opening of another coastal field. On the drill stem test with the tool opened 20 minutes with quarter inch chokes on both bottom and top 17 fourbles of 38 gravity (A.P.I.) oil was recovered. No attempt was made to complete a well, and the hole was carried on down as an exploratory test. A total depth of 8,015 feet was reached, but because of heaving shale in which drill pipe hung up further drilling was halted. The hole now has been cleaned and is being plugged back to the sand.

The sand to be tested is in the Frio, which formation was topped at 5,030 feet. Other sands were encountered from 5,900 feet on down but salt water showed in drill stem tests of those.

Completion of a well in the Stewart test obligates the Pure Oil Co. to an immediate drilling development program totaling seven tests. This obligation originally totaled 15 tests. A second test already is drilling, this being No. 1 Kuntze, located a mile to the south, and which at latest report was down 5,010 feet in shale. Markers so far available on the latter, namely the top of the marine Oligocene, show it to be running almost uniformly with the Stewart well.

Shell Petroleum Corp.'s Lakeview prospect, north of El Campo, where Smith & McDannald are drilling their second test located on the Ridgeway tract in H.&T.C. Survey, Section 8, is another important area. However, the second test, although in the same section, has failed to encounter the sands found by the first test. Although the latter never has been completed it generally is looked upon as being good for a gas well of some kind from sands above 3,250 feet, the present bottom of the hole, a plug back job. However, the test is standing with the rig moved off.

Third Oil Producer in Livingston

The third oil producer for the new Livingston Field of southern Polk County has been completed by Shell Petroleum Corp. in its No. 1 Munson, which from sand at a total depth of 4,330 feet flowed 393 bbls. of pipe line oil in the first 12½ hours through a 24/64-inch choke. Pressures gauged 775 pounds on the tubing and 1,210 pounds on the casing. The well is a west offset to the same company's No. 1 Davis-Holmes, which has been flowing steadily 700 bbls. daily under restricted production.

Dick Schwab's No. 2 Davis-Holmes, which showed salt water in a recent drill stem test of sand at 4,320-94 feet, has been plugged back to 4,346 feet in an effort to shut off the water and complete as a gas well. On the drill stem test it gauged 650 pounds pressure through a half-inch choke. Location of the latter is southwest of the same operator's No. 1 Davis-Holmes, the wet gasser discovery well of the area, and approximately three-quarters of a mile northwest of the three producing oil wells.

Shell Petroleum Corp. added another good well at Iowa, located on the Calsasieu-Jefferson Davis Parish line, by the completion of its No. 4 Fontenot, which came in flowing at the rate of 33 bbls. an hour through an 8-inch choke from sand at a total depth of 6,926 feet. It gauged 1,260 pounds on the tubing and 1,350 pounds on the casing.

At Manvel, Brazoria County, the Texas Co.'s No. 3 Ewing was completed flowing 16 bbls. an hour through a quarter-inch choke from sand at 3,889 feet with pressure of 700 pounds on tubing and 1,075 pounds on casing. This is one of a series of good wells which have been brought in from the shallow Miocene horizon.

Sinclair Prairie Oil Co.'s No. 11 Wilburn, Barbers Hill, deepened from sand at 5,183 feet to a horizon at 5,234-70 feet, was completed flowing initially at the rate of 104 bbls. an hour through two half-inch chokes, gauging 310 pounds pressure.

The remainder of coastal completions were in proven territory of the Conroe Field. These totaled 15 new wells, the most completions reported for any single week in months. A little increase in drilling activity also was reflected at Conroe with several companies starting up additional rigs.

Tomball Well Center of Interest

At Tomball, interest now is centered on Humble Oil & Refining Co.'s No. 1 Herbert Reid, located nearly three-quarters of a mile east of the discovery well, which at latest report was drilling below 4,400 feet. Although no marker points have been made available the well is reported to be running very favorably high. It is the key test to determine the southeastward trend of the field. Outlying tests already have been drilled on the north, west and extreme northeast.

No additional new operations were started up at Tomball during the week. Magnolia Petroleum Co. still is trying to pull screen in its No. 1 Rudel, recently completed as a gasser in sand at 5,528 feet. Opinion has been expressed that the sand in which this well has been completed is the equivalent of the upper Cockfield sand at Conroe, which sand over the top of the field carried only high pressure gas. If the same structural conditions prevail at Tomball as at Conroe and the Rudel sand is the upper Cockfield the main producing horizon at Tomball has not been touched.

Activity at Greta, Refugio County, in the lower Gulf Coast country, was increased the past week with the starting up of a half dozen additional operations. No more wells have been completed although attention at this time is centered on Dash Production Co.'s No. 1 J. M. O'Brien, a southwest extension test, which is drilling below 4,000 feet and should pick up the pay within a couple of days. There now are approximately 20 tests under way. A consistent production record has been shown for the three wells completed in the field so far. For the 24 hours ending at 7 a. m. Saturday, these wells produced as follows: Greta Oil Corp.'s No. 1 O'Brien (discovery), 740 bbls.; Alamo Oil Co.'s No. 1 O'Brien, 1,173 bbls., and E. H. Buckner's No. 1 O'Brien, 1,811 bbls., a total of 3,724 bbls.

Pure Oil Co.'s No. 18 Mayes, Lost Lake, Chambers County, is fishing for 52 joints of drill pipe following a blowout the past week from a sand at 2,268 feet. The blowout lifted the pipe and then allowed it to drop in the hole.

Well Presents Puzzle

Amerada Petroleum Corp. and Rycade Oil Corp.'s No. 4 Seaburn, East Stratton Ridge, Brazoria County, topped into salt at 4,211 feet in which it has drilled to 4,264 feet. This test is only 150 feet west of No. 3 Seaburn, which drilled to 4,500 feet without hitting the dome and which at that depth was completed flowing more than 1,500 bbls. daily for a time before water overtook it. This complicates still more the puzzle of the relationship of the new, or east, Stratton Ridge with the old Stratton Ridge Dome. Between this test and the old Stratton Ridge Dome, a mile farther west where salt is topped at a shallow depth, a deep test has been drilled without getting salt while on the far east another comparatively shallow test also went into salt. The picture seems to be that of one large salt mass with a number of different sinks.

Plymouth Oil Co.'s No. 1 Ream, discovery oil well of the Garwood district of southern Colorado County, which produced for a short time and then went to water, has deepened from 6,203 feet, its former completed depth, to 6,211 feet, where efforts, so far unsuccessful, are being made to get a drill stem test. Humble Oil & Refining Co.'s No. 1-B Powell, diagonal northwest offset to that well, at latest report was drilling in shale below 3,500 feet.

Gulf Production Co. has made location and erected derrick for a second rig to operate at Jannett, Jefferson County. This will be No. 7 Burrell, located 150 feet west of No. 6 in the W. H. Smith Survey. Gulf's No. 2-A Junker, same survey, is drilling gumbo at 1,162 feet. This is the first work which Gulf has done on that dome in several years.

Yount Lee Oil Co.'s No. 1 E. W. Boyt, H.&T.C. Survey, Section 17, on the Liberty-Chambers County line, now is the deepest test ever drilled on the coast, having passed the record set by a test drilled by the same company in the same area and abandoned several months ago at 9,344 feet. The Boyt well now is drilling well below 9,400 feet. So far no showings have been reported. Between this deep test and the Hankamer Field, Gulf Production Co. has rigged up for its second test on the Crowe and Jacobs tract in the H.&T.C. Survey No. 21. The first test found production in a horizon around 4,900 feet but made considerable water and was deepened to below 6,400 feet where it was abandoned.

Gulf Coast Fields and Wildcats

Week Ending July 22

DAMON MOUND—BRAZORIA COUNTY

Company, farm and location—	Remarks
Intercoastal Oil Co.'s No. 11 Wisdom, 350 ft. E of No. 6, Blk. 51, Lot D, A. Durst Sur.	Drlg. gumbo 1,640 ft.
Sinclair Prairie Oil Co.'s No. 31-A Bryan, 155 ft. N, 45 deg. E of SW cor. of Blk. 28, Masterson Subd., and 140 ft. S, 45 deg. E, A. Darst Sur.	T.D. 7,586 ft; standing.

MANVEL—BRAZORIA COUNTY

Texas Co.'s No. 6 Belcher, H. N. Little Sur., South 42° W 2,400 ft. and S 48° E 400 ft. from N cor. lease	Rig.
The Texas Co.'s No. 2 Davis, 300 ft. out of S cor. Lot 42, H. N. Little Sur.	Drlg. shale 5,260 ft.
The Texas Co.'s No. 3 Ewing, H. N. Little Sur., 250 ft. from E line, 400 ft. from S line of Lot 30	Set 53¼ ft. of 7-in. O.D. screen, 3,889 ft; comp. 16 bbls. per hr.; ¼-in. choke; tubing pressure 700 lbs.; csg. pressure 1,075 lbs.

BARBERS HILL—CHAMBERS COUNTY

Mills Bennett Prod. Co.'s No. 1-C Barber, Henry Griffith League, 100 ft. E, 30 ft. N of SW cor. of tract.	Drlg. cap rock 1,330 ft.
Mills Bennett Prod. Co.'s No. 4 Kirby (W.O.), Henry Griffith League	Coring sand and shale 4,393 ft.
Mills Bennett Prod. Co.'s No. 5-A Wilburn (W.O.), Henry Griffith League	Coring hard sand rock 4,849 ft.
Sinclair Prairie Oil Co.'s No. 11 Wilburn (W.O.), Wm. Hodges Sur.	Set 46½ ft. of 3½-in. screen 5,270 ft; comp. 104 bbls. per hr.; two ½-in. chokes; 310 lbs.
Sinclair-Prairie Oil Co.'s No. 14 Wilbur (W.O.), Henry Griffith League	T.D. 3,802 ft; milled out 3,028 ft; and drlg. sand and shale 3,056 ft.
Sun Oil Co.'s No. 11 Wilburn fee (W.O.), Wm. Hodges Sur.	Pulling screen to deepen 3,455 ft.
Sun Oil Co.'s No. 12 Wilburn (W.O.), Wm. Hodges Sur.	Drlg. shale 4,974 ft.
Sun Oil Co.'s No. 17 Wilburn, Henry Griffith League, 150 ft. W of No. 6 and 50 ft. S of N line	Derrick.
The Texas Co.'s No. 8 Wilburn (W.O.), Henry Griffith League	Cored sand and shale; S.O. 5,074-5,110 ft.
Texas Gulf Prod. Co.'s No. 11-B Kirby, Henry Griffith League, 411 ft. from S line, 473 ft. from W line of tract	Drlg. salt 1,438 ft.
Texas Gulf Prod. Co.'s No. 3-C Kirby (W.O.), Henry Griffith League	Rig up to W.O., 5,224 ft.
Yount Lee Oil Co.'s No. 20 Chambers County, Wm. Bloodgood Sur., 350 ft. from NW line and 50 ft. from SW line of lease	Coring sand and shale 4,676 ft.
Yount Lee Oil Co.'s No. 21 Chambers County (W.O.), Wm. Bloodgood Sur.	Hard sand and lime 2,133 ft; P.B. to 1,962 ft.
Yount Lee Oil Co.'s No. 22 Chambers County, Wm. Bloodgood Sur., 200 ft. from W line, 262½ ft. from N line of lease	Drlg. salt 2,751 ft.

LOST LAKE—CHAMBERS COUNTY

Pure Oil Co.'s No. 18 Mayes, E. H. R. Wallis Sur., 205 ft. N and 425 ft. W of No. 1 Lost River	Blew out 2,268 ft; dropped 52 joints of drill pipe in hole.

RABBS RIDGE—FORT BEND COUNTY

Gulf Prod. Co.'s No. 4-A Gubbels, Samuel Kennedy Sur.	Drlg. shale 4,775 ft.
Humble O. & R. Co. and Gulf Prod. Co.'s No. 9 T. R. Booth, J. Rabb Sur.	Sand and shale 5,300 ft.
Humble O. & R. Co. and Gulf Prod. Co.'s No. 7-A Geo. J. Rabb Sur., 1,744 ft. from W line, 454 ft. from S line	T.D. 5,339 ft; cmtd. 7-in. csg.

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Another Gas Field in Starr County, Texas, Seen as Possible; Duval County Test Promising

By B. D. STEVENSON
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., July 24.—Possibilities of another gas field in Starr County centered for the second time around the Jeffries-Lambeth Drilling Co.'s No. 1 Starr County Cattle Co., 10 miles northeast of Rio Grande City and that distance from any production. In sand at 2,450-55 feet on three-minute drill stem test at the end of which time the seat gave way, it made a big volume of gas. When the seat for the tester gave way it filled with mud and it is said by some that the mud showed a little oil. The test has since cored another 5 feet and is still in sand and is setting casing.

This test had a good gas showing, said to have been ample for a commercial well, at 1,516-22 feet which tested 250 pounds but passed it up in the hope of finding some oil. The test has stood for the past two or three months at 2,265 feet for lack of water to drill with and recent rains made operations possible again. This test is far to the east from the Sun Oil Co.'s new pool found in northwestern Starr County with the No. 1-A Guerra at 2,232 feet flowing considerable gas and making 15 bbls. of oil an hour.

Sun Oil Co.'s No. 1-B Guerra, a half mile north of No. 1-A Guerra, failed to get much in the same sand and at 2,430-76 feet in sand tested salt water and then encountered a fishing job but has cleared the hole and the plan was understood to be to continue to core.

Sun Oil Co.'s No. 1-C Guerra, a half mile south of the No. 1-A Guerra, set casing and late in the week was reported drilling in with casing set at 2,138 feet and sand at 2,141-49 feet and showing gas on drill stem test.

The understanding is that there will likely be some additional wildcatting by various interests around north and south of the Sun Oil Co.'s block in the hope of finding some more similar structures.

Duval County

Freeman Duggan's No. 1 Sutherland, in Survey No. 187, northeast of production in the North Kohler Pool (formerly called the Peters Pool) is setting casing after running into a new sand at 2,577-81 feet that tested 15 joints of mud and oil and three joints of pure pipe line oil. The test is a half mile north of the Brooklyn Oil Co.'s No. 1 Sutherland in the same survey which made a gas well spraying oil at 2,447-53 feet. Duggan seems to have failed to get that sand.

The Brooklyn Oil Co.'s well produces at about the same depth as the two gas wells 2 miles southwest, one of which is the discovery well of the field. The Shasta Oil Co.'s No. 4 Peters is about half way between the two gas wells and the Brooklyn well and at the depth of the Brooklyn test got gas. Windsor Oil Co.'s No. 1 Peters west of the two gas wells made gas in a shallower sand. Heretofore all the tests have got considerable gas and very little oil. The Duggan test looks more like an oil well than anything yet drilled. With luck it should be ready to test some time this week.

Operations around Surveys 363 and 362, 2 miles northwest of the North Government Wells Pool, have slowed up a little due, it is understood, to negotiations of the Reynosa Oil Corp. to buy the east half of the southeast quarter of Survey 363 from William B. Stewart.

The Reynosa Oil Corp.'s No. 1 Duval County Ranch Co., NW cor. SW Survey 362, is a diagonal southeast offset to the Magnolia's well, SE cor. NE Survey 363, which is a 95-bbl. well on the pump and opens a new pool. Reynosa is on the sand with casing set and Stewart's No. 3, a quarter mile south of the Magnolia, is close to the sand and it is understood while both of them will likely make oil wells of some kind the deal will be closed before they are completed. The Reynosa test has been ready to drill in for more than a week.

This proposition is probably the most interesting in North Duval County at this time, except possibly the Duggan well.

Another proposition that is being watched is the DeSoto Oil Co.'s No. 2 Wood-Welder in Survey 211, 3 miles northeast of the North Government Wells Pool. No. 1 made a gas well at 2,168 feet with no oil and No. 2, located 660 feet east of it, is expected to go into the oil production. It spudded in last week.

S.R.&C. Oil Co. and Sinclair-Prairie are starting another test in southern McMullen County in the big block in which Sinclair-Prairie bought an interest. Two tests were drilled, No. 1 and No. 2 La-Chusa, about 3 miles apart and about 18 miles northeast of the North Government Wells Field and in the same general trend. The new location is about mid-way between the other two and a mile southwest.

Of two other tests one, Shumway's No. 3 Shiner, northeast, is starting to drill again after being shut down for a time and Darby Oil Co.'s No. 1 Sling, southwest of the S.R.&C. and between it and the North Government Wells Field, is still shut down at 1,902 feet waiting for water.

Balcones Fault Zone

Humble got a sulphur water well in No. 1 Hardy in Central Wilson County in the Edwards lime at 5,198-5,204 feet. It is on one of several important structures back from the Balcones fault and in a zone where the Edwards is had at the expense of deeper drilling. The Edwards was found porous in the Humble test but furnished nothing but sulphur water though there were some who claimed there was a slight show of oil. The test is continuing to drill in the Edwards but only for information as to the nature of the formation farther down and not with the hope of finding any oil.

This leaves only two deep Edwards lime tests left. Zavala Oil & Gas Co.'s No. 1 Gates in Zavala County after getting the fish out of the hole is standing not yet down to the Edwards. Amerada's No. 1 Doerring in Frio County is drilling a water well and getting ready to start.

For the time being, the C. W. Boler and O. N. Beer's No. 1 Kearney in Bexar County is the Edwards test to be watched as it will be next to return a verdict. It is a shallower proposition, however. It got a good showing in the Austin chalk, especially after being treated with acid, but failed to show possibilities of anything but a small well of 2 to 5 bbls. and has started back in the hole to deepen to the Edwards lime. At 1,257 feet it is established that it is in the Eagleford topped probably at about 1,248 feet, but with identification not positive as to the top. It had a little fishing job that was not expected to cause much delay and should be down into the Edwards early this week.

This test is thought well of. It is running high, plenty high enough to make a well and the fault displacement is ample.

Edwards Plateau

Eastland Oil Co. abandoned No. 1-D Love in southwestern Kerr County at 3,508 feet dry, and now Evans & Gant are going back into No. 1 Love, the discovery well in that territory that was on the pump for a time at 3,391 feet and that made about 15 bbls. of oil a day and about 250 bbls. of water, the oil being 39 gravity. It was producing from a sand member of the Pennsylvanian but was finally deepened to 4,060 feet. It is now pulling the casing or rather raising it. It is thought that the casing might have been set too low and shut off considerable of the production at 3,391 feet. Another effort will be made to make a well of it at that depth and if that fails the intention is to deepen to the Ordovician. The Pennsylvanian was topped at around 1,380 feet in several wells drilled by Evans & Gant and the Eastland Oil Co.

W. E. Clark's No. 1 Love, located about 1¼ miles east of Evans & Gant's test that is being worked over, is rigging up and should be ready to spud in most any day.

The good showing had in the Evans & Gant's No. 1 Love is the best indication of production possibilities in the Pennsylvanian that has been encountered in that part of the Edwards Plateau.

Bee County

Gresham and others' No. 1 Rapp & Hatch, 1 mile west of the Tuleta Pool in Bee County, in a new sand at 4,387-92 feet, started drilling the plugs late in the week, but the intention was to plug back a little before making a test.

This hole failed to get production in either the Pettus sand or the Yegua which furnished oil in the Tuleta Pool and about 140 feet deeper picked up this new sand which may be merely another sand section in the Yegua but deeper than the one that furnished some good showings in tests in the Tuleta Field. The drill stem test was not entirely satisfactory as the tester valve failed to close when it was raised, and after showing a lot of gas with heavy spray of oil it flowed for some minutes after the tester had been raised. When the valve finally closed the drill stem was run out and it had a little salt water in it.

The sand was had at 4,387-92 feet and the total depth is 4,393 feet and the last foot is in shale. For fear the salt water may be from the bottom in the shale the intention is to plug back a little and it therefore may be far into the week before a test will be made.

Wildcat Operations in Southwest Texas

Week Ending July 22

Company, well, farm name, section and block—	Remarks:
ARANSAS COUNTY	
Harry Travlor's No. 1 Dietzel, 330 ft. from SW and SE lines of 30-ac. tract in J. Smith Sur.	Moving in rig.
ATASCOSA COUNTY	
A. Blume's No. 1 Shaw, 690 ft. from N line, 1,780 ft. from E line of 100-ac. tract in W. Farquhar Sur. No. 275	T.D. 1,996 ft; twisted off D.S.
E. C. Burton's No. 1 Smith-Mowinkle, 2,100 ft. from N line, 200 ft. from W line of F. Perez Sur. No. 172.	T.D. 350 ft; drlg.
BASTROP COUNTY	
Adams & Lyles' No. 1 Peter Goertz, 1,075 ft. from N line and 250 ft. from W line of 40-ac. tract in Andrew Mays Sur.	T.D. 2,490 ft; coring chalk.
Detroit Texas' (M. O. Rayor) No. 1 J. W. Miear, 150 ft. from N and E line of 63-ac. tract in McMillam Sur.	Drlg. wtr. well.
J. E. Emanuel's No. 1 H. Klemm, 817 ft. from W line, 100 ft. from S line of tract in R. S. Teal Sur.	T.D. 850 ft; standing.
Ca-Tex O. & G. Dev. Corp.'s No. 1 Harris, 150 ft. from NW line, 3,000 ft. from SW line of John Maxmillan Sur.	T.D. 2,312 ft; running csg.
Ca-Tex O. & G. Dev. Corp.'s No. 1 Pendergrass, 1,343 ft. from NE, 310 ft. from SE line of 130-ac. tract in Henry Warnell Sur.	Rigged up and standing.
BEE COUNTY	
Nichols & Bruner's No. 1 Grover Heidenfels, 891 ft. to S line, 1,950 ft. to E line of 837-ac. tract survey, John Bryan, 4 miles S from Beeville	T.D. 5,000 ft; drlg.
BEXAR COUNTY	
Amsden & Foster & Amsden's No. 1 S. A. Irrig. Farms, 600 ft. E of Kinney Road, 1,500 ft. N of Elm Creek.	T.D. 1,200 ft.; standing.
O. N. Beer's No. 1 S. W. Kearney, 150 ft. from S and E lines of 28-ac. tract in S. C. I. Perez Sur.	T.D. 1,257 ft; pulling liner to deepen to Edwards; est. 2 to 5 bbls. in chalk.
A. M. Blume's No. 1 Ridder, 300 ft. from W line, 1,000 ft. from N line of tract in Sur. No. 58, County Blk. 1,596	Ready to spud.
R. S. Boling's No. 1 J. J. Appelt, 150 ft. from N and W lines of tract in M. Uriegas Sur.	T.D. 830 ft; standing.
Austin Hull's No. 1 Clausen, 268 ft. from W line, 2,500 ft. from S line of tract, 12 miles N of San Antonio.	T.D. 1,810 ft; trying to run csg.
M. L. Howard's No. 1 James Watson, 500 ft. from W line, 2,000 ft. from S line, Sec. 16, B. Martinez Sur., 12 miles S from San Antonio	T.D. 2,535 ft; trying to put it on the pump.
LaSalle Oil Co.'s No. 1 City Sewage farm, 150 ft. S of Rilling Road, 450 ft. W of NE cor. of tract in D. Bustillos Sur.	T.D. 55 ft.; setting surface csg.
Motes-Campbell's No. 2 Pruitt, 300 ft. N of No. 1 on 187-ac. tract, McCullough County Sur., Blk. 4,299.	T.D. 1,833 ft; in crevice in Edwards.
H. A. Pagenkopf's No. 1 G. A. Goeth, 500 ft. from SE line, 600 ft. from SW line which is San Antonio River, Juan Montes Sur.	T.D. 534 ft; drlg.
O. L. Ray's No. 1 Thos. Dillon, 3,500 feet from NW line, 1,750 ft. from most southerly SW line of de Luna grant in southern part of county	T.D. 680 ft; standing.
J. Morgan Russell's No. 2 Brotze, 200 ft. W of No. 1, in Cordenas Sur.	T.D. 340 ft.; standing.
C. A. Smith's No. 1 Henry Lamb, 750 ft. from N and E lines of Lamb farm, in de la Garza grant	Spudded in and waiting for heavier rig.
F. E. Tegler's No. 1 Brackenridge, 578 ft. from S line, 2,284 ft. from W line of tract in Maria Gertrudis de Alaniz Sur.	T.D. 965 ft; standing.

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California Producers Preparing to Operate Under Provisions of the Code of Fair Competition

By L. P. STOCKMAN
Staff Correspondent, California Fields

LOS ANGELES, Calif., July 22.—With final approval of the Code of Fair Competition for the Oil Industry an early possibility, California operators are showing a keep interest in its probable effect on production and finances. The California Central Proration Committee met recently and a report of a subcommittee concerning the application of the new order of curtailment under the proposed code was received with favorable comment and taken under consideration. The subcommittee's report provides that regulation of the producing branch of the industry in California shall function through a representative group composed of district committees, the Central Proration Committee and the oil umpire, their work being co-ordinated through and under the direct supervision of the central committee.

The report of the subcommittee contains detailed recommendations on the regulation of drilling and production activities, allocation of production quotas to fields and individual allocation within fields. A statement of policy and procedure for the adjudication of disputes over labor and employment, for amendment and revision and for adjustment of controversies in the administration of the code is included. The principles recommended for regulation of driling activities contemplate unhampered drilling of old fields, reasonable drilling in settled fields, restricted drilling in flush fields, a liberal allowance for wildcat exploration and the discouraging of abnormal and unconventional drilling.

Factors Involved

The proposed allocation of production quotas to California fields is predicated on the assumption that due consideration must be given to the demand for the quality of oil produced, the minimum requirements of the producing unit, the average well potential and allotment, the number and depth of wells, the degree of development, the undeveloped potential, proved or developed acreage and accessible reserves. It is evident that the committee has given thought to this phase of the proposed code and that those charged with general supervision are endeavoring to formulate an equitable program of curtailment and are definitely committed to a fair allocation of state production.

Failure to give consideration to the demand for the quality of oil produced has been one of the weaknesses in California curtailment programs, due primarily to the fact that the production of heavy unrefinable crude plus the residuum production from refining operations has exceeded normal fuel oil requirements. As a consequence heavy crude and fuel oil stocks have reached uneconomic levels and by reason of evaporation losses, taxes and other factors, have become a burden.

If present excessive stocks of heavy crude and fuel oil could be liquidated, marketers would be in a position to pay a better price for current production of heavy unrefinable crude. This would prove beneficial to both producer and refiner and permit an upward revision of wage scales. Under the code of fair practices for the petroleum industry, withdrawals from storage are limited to 100,000 bbls. a day.

In the control of production it is proposed to prohibit both surface and underground waste and at the same time encourage sound economic production practices, respect for subsurface equities, joint consideration of operating and royalty interests, restoration to production of shut-in wells and fields, protection of water-threatened areas and consideration of all individual entities in the allocation of production.

Field Operations

Oil field operations reported to R. D. Bush, state oil and gas supervisor, during the past week show 58 notices to drill new wells filed, as compared with 104 the previous week. Five were for wells in the Huntington Beach Field, four in the Inglewood Field, three at Long Beach, four in the Playa Del Rey Field, one in the Elwood Field, four in the Piru Field of Ventura County, 27 in the fields of Kern County and one each at Brea Olinda, Richfield, San Diego County, Colusa County, Kings County and five in San Luis Obispo County.

During the current year to date operators have filed 468 notices to drill new wells, as compared with 174 at the same date last year. It is evident that these figures reflect attempts to escape enforcement of the Code of Fair Competition for the Petroleum Industry by getting state permission to drill before the national code becomes effective. As a result of the deluge of "paper" locations filed with the state oil and gas supervisor, the division of oil and gas has issued notice to operators that the $5,000 drilling bond required by the law with applications to drill must be furnished in each case before August 22 or no permit will be granted. In the past, operators have posted usually the required bond when actual drilling got under way.

Tideland Development

The Orange County Board of Supervisors has approved a resolution calling upon the state legislature to cede the state tideland at Huntington Beach to the city of Huntington Beach with authority to drill for oil. The resolution was adopted recently by the Huntington Beach city council, which previously had consummated a lease for development of the tideland property if and when this could be done.

The resolution states that a portion of the tidelands are located above an accumulation of oil now being drained by private interests and that exploitation by the city of Huntington Beach will release approximately $2,000,000 into channels of trade for the benefit of the city, state and county taxpayers. The state legislature is not expected to comply with the request contained in these resolutions as voters of the State twice have defeated similar attempts.

Impressed by the argument that California will lose approximately $1,000,000 a year because operators in the Huntington Beach Field are drilling obliquely into an oil accumulation located beneath public tidelands, the joint senate-assembly rules committee has voted to submit a bill taxing all operators guilty of whipstocking wells out under the tidelands adjacent to the Seventeenth Street town lot area of the Huntington Beach Field. This proposal is of particular importance because the state legislature was considering the advisability of passing a bill for this specific purpose several months ago, but decided to maintain a hands off policy.

Huntington Beach

The Wilshire Oil Co. focused the attention of operators on the Huntington Beach Field of Los Angeles Basin a few days ago by completing a large well in the Seventeenth Street town lot area immediately adjacent to the state tidelands that have been involved in litigation for several years. The Wilshire's completion was No. 15 Huntington, a new well finished at 4,460 feet and brought in flowing 4,680 bbls. of clean 26.2 gravity oil and 2,400,000 feet of natural gas a day. This is the largest well finished since development work started in the Seventeenth Street town lot area late last year. In order to build the rig and start drilling operations on No. 15, the Wilshire dismantled and removed a service station which had been standing on the site for several years.

The West Shore Petroleum Corp. successfully completed No. 1 Lowder in the Huntington Beach Field a few days ago, but this project, unlike the Wilshire's No. 15 Huntington, failed to result in substantial production. No. 1 Lowder, spudded in about six weeks ago, has been finished on the beam pumping 260 bbls. of 25.8 gravity oil a day from 4,451 feet.

The Termo Oil Corp. has finished drilling operations on No. 1 McIntyre in the town lot area and is preparing to conduct a production test within the next few days. In addition to this work Termo has started rig construction for No. 2 fee, which probably will be spudded in within the next 15 days.

The Standard Oil Co. has started rig construction for three new wells to be drilled in the town lot area immediately. The Standard's new wells which should begin making hole within the next two weeks are No. 64-B and Nos. 17 and 18 on the Pacific Electric property. All three are along the ocean front between the state tidelands and the subdivided area now undergoing intensive development. Doyle & McKeon have succeeded in developing steady production in their No. 1 Huntington, as the well is pumping 290 bbls. of clean 25.4 gravity oil a day from 4,350 feet. This well was given a preliminary production test about 10 days ago but subsequently sanded up.

Elwood

Two new completions were chalked up in the Elwood Field of Santa Barbara County and the Barnsdall and Rio Grande's No. 9-A on tideland permit No. 88, is expected to be put on production by early August. The two new wells finished are the Bankline Oil Co.'s No. 10 on tideland permit No. 89 and Caroline Spalding's No. 7 on tideland permit No. 93. The latter is a good well so far as volume is concerned, but the output is cutting approximately 10 per cent. This new well, bottomed at 3,440 feet and finished with a 13⅜-inch water string landed and cemented at 3,368 feet, was brought in flowing 2,130 bbls. of 35.4 gravity oil and 3,660,000 feet of natural gas a day through two 1½-inch beans.

The Bankline Oil Co.'s No. 10 on tideland permit No. 89 showed an initial daily production of 396 bbls., the oil being exceptionally clean and testing 36.2 degrees A.P.I. This well was brought in barefoot as the hole is open from 3,327 feet to bottom at 3,388 feet. Both of these completions were finished in the Vaqueros and, in compliance with the gentlemen's agreement to refrain from exploitation of the underlying Sespe, the Barnsdall and Rio Grande's No. 9-A will likewise be finished in the present productive Vaqueros.

In the Santa Barbara Mesa Field, Fred Cole has completed No. 1 Stewart Community flowing 370 bbls. of clean 19.1 gravity oil a day from 2,130 feet. This well is flowing through a twenty-four-sixty-fourths inch bean under a pressure of 80 pounds on the tubing and 345 pounds on the casing. It has shown a decline within the past few days, however, as production during a recent 24-hour period totaled 184 bbls.

Fred Garliepp has material on ground for a well to be drilled in the Santa Barbara Mesa Field and spud will probably be made in the next 15 days.

The Standard Oil Co. is expected to encounter the More gas zone in the Goleta gas field of Santa Barbara County soon and although the company's test, No. 1 Chase & Bryce, is ostensibly being

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	July 8		July 1			
Intercoastal-domestic—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Crude oil	.....	.....	.....	.....	78,085	.....
Fuel oil	.....	.....	.....	.....	805,661	.....
Diesel and gas oil	.....	.....	.....	.....	1,085,064	147,070
Gasoline	290,131	41,447	420,190	60,027	5,067,640	4,396,351
Kerosene	.....	.....	5,976	854	502,970	154,372
Foreign exports—						
Crude oil	10,112	1,445	287,955	41,136	3,783,801	4,619,888
Fuel oil	129,865	18,552	281,257	40,180	4,081,559	4,760,161
Diesel and gas oil	83,943	11,992	84,945	12,135	1,932,774	1,400,953
Gasoline	111,720	15,970	302,068	43,153	3,443,474	4,992,527
Kerosene	21,037	3,005	177,014	25,288	1,020,864	1,335,636
Naphtha distillates	.....	.....	.....	.....	.....	120,075
Coastwise-domestic—						
Crude oil	.....	.....	.....	.....	4,456,650	7,707,859
Fuel oil	215,383	30,769	259,351	37,050	5,474,690	6,614,809
Diesel and gas oil	7,947	1,135	34,712	4,959	756,362	725,353
Gasoline	256,822	36,689	244,015	34,859	6,435,229	8,314,194
Kerosene	.....	.....	3,521	503	108,615	96,341
Naphtha distillates	.....	.....	.....	.....	27,651	.....

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Diesel and gas oil	.....	.....	.....	.....	280,531	231,170
Gasoline	70,106	10,015	.....	.....	571,072	430,185
Kerosene	.....	.....	.....	.....	482,430	.....
Lubricants	7,966	1,138	.....	.....	24,366	15,824
Foreign exports—						
Crude oil	.....	.....	.....	.....	999,943	707,651
Fuel oil	.....	.....	.....	.....	361,366	582,109
Diesel and gas oil	.....	.....	.....	.....	584,718	352,107
Gasoline	.....	.....	64,910	9,273	2,311,554	2,028,213
Kerosene	.....	.....	26,839	3,834	552,019	548,858
Lubricants	.....	.....	1,501	214	33,427	24,934
Coastwise-domestic—						
Fuel oil	.....	.....	73,412	10,487	1,742,254	1,536,248
Diesel and gas oil	.....	.....	.....	.....	166,162	238,094
Gasoline	191,665	27,381	82,337	11,762	1,914,233	1,832,815
Kerosene	.....	.....	.....	.....	73,619	65,756
Lubricants	.....	.....	.....	.....	2,751	.....

drilled in search of oil, it would not be surprising if the company finished it as a gas well and temporarily suspended further development. Completion of a commercial gas well, even though it could not be produced until next winter at the earliest, would validate the company's lease.

San Miguelito

There was no appreciable change in the status of the Continental's No. 2 Grubb or No. 1 Valenzuela of the Honolulu Consolidated, which are being drilled in the San Miguelito Field of Ventura County, and both projects have given rise to concern. No. 1 Valenzuela has all the earmarks of a dud, although it still has a chance of picking up a new deep sand. The Continental failed to encounter the Grubb zone in No. 2 Grubb and while this well is in the V.L.&W. zone it does not look any too hot. No. 1 Grubb, the Continental's discovery well, is flowing 1,085 bbls. of exceptionally clean 31.4 gravity oil and 950,000 feet of natural gas per day from the V.L.&W. horizon at 7,152 feet.

Judging by the present status of the Continental's No. 2 Grubb and the Honolulu Consolidated's No. 1 Valenzuela, the San Miguelito Field is going to be extremely narrow. The Chanslor-Canfield Midway Oil Co. suspended drilling operations on No. 3-A Hobson several weeks ago at 4,167 feet pending the outcome of drilling operations on No. 1 Valenzuela.

In the Ventura Avenue Field the General Petroleum is rotating ahead in No. 15-A Barnard, a projected completion in the deep 57 zone at 8,300 feet. This well still has several hundred feet to go before completion. The Shell is completing preparations to begin drilling operations on Nos. 77 and 78 on the Taylor lease. The Associated has two wells, Nos. 14 Hartman and No. 134 Lloyd, drilling ahead in the oil sand, but neither is scheduled for immediate completion as they will be carried down in order to get larger production.

In the Sespe district of Ventura County the Merchants Petroleum made a production test on No. 6 Cochran a few weeks ago but failed to develop commercial production at 954 feet due to water trouble. This well was swabbed in flowing approximately 2,000 bbls. a day, about 50 per cent of which was carbonated water. The well subsequently died and again was swabbed in early this week but it does not appear to have sufficient gas pressure to result in a sustained flow. The company is making preparations to install pumping equipment.

In the South Mountain district of Ventura County the Los Cerritos Petroleum Co. has started road construction to a site selected for a well to be drilled in Section 17-3-20.

Mountain View

Drilling operations in the Mountain View Field of Kern County apparently reflect the uncertainty with respect to the policy to be pursued in the application of the oil industry's new code. Several operators holding acreage in this field are hoping that unit development or some other form of co-operative effort can be formulated to cover drilling and production activities. Operators recognize the necessity of reducing drilling operations in the Mountain View Field to a minimum in order to eliminate competitive drilling and restrict production to the lowest possible level. Development of flush production would seriously impair effectiveness of the new code by forcing operators in other fields to pinch back enough production to offset new production added by progressive completions. There is no great change in development work under way in the Mountain View Field, but two additional wells are expected to begin making hole within the next 10 days.

Lost Hills-Belridge

The Associated Oil Co. has encountered a promising oil sand in No. 1 Williamson, a deep test which the company is drilling in conjunction with the Richfield Oil Co. in the Lost Hills Field of Kern County. Due to the fact that the upper part of the Temblor was wet, the Associated is running a formation tester to ascertain whether the last 100 feet of hole offers any promise of commercial production. This deep test, located in Section 2-26-20, is down 4,799 feet.

In the North Belridge Field the Continental Oil Co. logged the Bentonite at 5,372 feet and is drilling ahead at 5,500 feet. The Casa Mira Oil Co. has reached the 3,500-foot level in No. 1-A on the Theta property in Section 29-28-20. In the McKittrick area the General Petroleum has been held up for several days in No. 1 Lovitt, a wildcat, due to the inability to maintain circulation at 1,065 feet, but this condition is expected to be surmounted.

The Fruitvale Field of Kern County has become relatively inactive, although there is still a little reconditioning work under way. The Mount Poso Field, on the other hand, is experiencing a revival of drilling with three wells already under way and preparations being made to start four more. Projected wildcat exploration in the Union Avenue and Comanche Point districts has not yet taken tangible form, although locations have been staked in each area.

Kettleman Hills

Operators in the Middle Dome of Kettleman Hills have definitely agreed to a program covering future development of that field and the operators involved have signed the articles of agreement. Proved acreage in the Kettleman Middle Dome Field has been definitely set at 1,170 acres and the location of the red line enclosing these properties has been approved by the several lessees. The Standard Oil Co. has 580 acres out of the total of 1,170 acres, or 49.57 per cent of the total participating interest. The Bolsa Chica Oil Co. holds a lease on 300 acres, which is the equivalent of 25.64 per cent of the total amount of proved acreage. Petroleum Securities, with 150 acres, and the Shell, with 140 acres, hold 12.82 per cent and 11.97 per cent of the total respectively. This indicates that the total proved acreage in the Kettleman Middle Dome Field is held by four operators, although subsequent development may extend the proven limits of the field and bring in additional acreage and one or more operators.

In addition to approving the selection of proved acreage, the operators have tentatively agreed to credit Petroleum Securities with the actual capital expenditure used in the drilling of No. 1 Burbank, even though this well failed to show commercial production. No. 1 Burbank, it will be recalled, definitely revealed the existence of a substantial accumulation in the Kettleman Middle Dome Field, but subsequently was suspended because of inability to overcome a complicated fishing job. The Bolsa Chica will probably also be recompensed as this company drilled a hole down to around the 3,000-foot level several years ago. The Bolsa's initial test was capable of producing approximately 100 bbls. of oil a day but was not listed as a commercial producer owing to low gravity oil encountered and absence of pipe line facilities.

Richfield

The Richfield district of Los Angeles Basin, discovered by the Union Oil Co. and the Standard Oil Co. in 1918, is experiencing a revival of drilling following a dormancy of several years, and indications point to the starting of several additional wells in the near future. The interest manifested in this field is the outcome of work undertaken last year by the Forward Petroleum and Otis Hoyt, as these operators were both successful in developing commercial production.

There has been a little drilling around the edge of the Richfield district for the past two or three years, but it has been within the last six or eight months only that this work has met with more than ordinary success. The Texas Co. entered the picture in March by redrilling and deepening No. 1 Steiner in an effort to determine the possibility of developing deeper production similar to that found by operators holding adjacent leases. The well drilled through a fault at 3,700 feet, however, and was abandoned a few weeks later around the 4,300-foot level. The Chanslor-Canfield Midway Oil Co. is preparing to redrill and deepen its No. 2 Richfield in this district and drilling operations will be resumed at 3,457 feet, from which depth the well has been producing for several years.

The latest completion in the Richfield district was J. O. Seeple's No. 1, recompleted last week flowing 598 bbls. of clean 26.2 gravity oil and 3,600,000 feet of natural gas a day. This well was originally completed by the Associated Oil Co. immediately following discovery of the Richfield district and produced thereafter. J. O. Seeple's No. 1 was the second well drilled on the Breen lease by the Associated Oil Co. and was originally completed as a commercial producer from 3,449 feet.

After the Associated disposed of the Breen lease, owing to small production and rather high lifting costs, Seeple acquired the property and redrilled and deepened No. 2 Breen from 3,449 feet to 3,723 feet and finished the hole with a 6⅝-inch liner, including 72 feet of perforated. Seeple has staked two additional locations in this field and contemplates additional development in the immediate future.

The Crystal Gasoline Corp. and the Imperial Gypsum & Oil Co. have already started drilling operations in their re-

(Continued on Page 124)

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, well, location—	S.T.R.	Depth	Status:
Palm Ridge Oil Co., No. 1 Palms, Los Angeles Co.	2- 2-15	6,000	sd. sh. drilling
Kupfer, A. M., No. 1 Inglewood, Los Angeles Co.	17- 2-14	5,863	plugging
Pacific Gulf, No. 1 Athens, Los Angeles Co.	19- 3-13	6,094	suspended
Pacific Oil Inv. Co., No. 1 Wilmington, Los Angeles Co.	28- 4-13	3,640	cleaning out
Pacific Oil Inv. Co., No. 2 Wilmington, Los Angeles Co.	28- 4-13	....	location
Sunrise Pet. Co., No. 1 Domingues, Los Angeles Co.	3- 4-13	3,281	sd. sh. drilling
Peoples O. & G. Co., No. 1 Compton, Los Angeles Co.	31- 3-12	rig	rigged up
Oakes & Mead, No. 1 Lyndwood, Los Angeles Co.	31- 2-12	4,940	redrilling
Community Oil Co., No. 1 Montebello, Los Angeles Co.	34- 1-11	5,281	suspended
Universal Consd., No. 1 Montebello, Los Angeles Co.	5- 2-11	6,311	resume work
Andrus & Hutcheson, No. 1 El Monte, Los Angeles Co.	11- 1-11	1,792	suspended
Signal Pet., No. 1 Puente, Los Angeles Co.	14- 2-10	4,908	plug 3,775 ft.
Willetts Pet., No. 1 Saugus, Los Angeles Co.	35- 5-16	2,074	suspended
Smith, A. J., No. 1 Saugus, Los Angeles Co.	32- 5-17	3,515	suspended
Alpha Oil Co., No. 1 Calabasas, Los Angeles Co.	22- 1-18	1,199	suspended
Hudson Pet., No. 1 Newhall, Los Angeles Co.	1- 3-16	1,565	suspended
Lester, C. T., No. 1 Newhall, Los Angeles Co.	17- 3-16	....	material
Ball, W. T., No. 1 Newhall, Los Angeles Co.	34- 3-16	3,582	suspended
Big Four Oil Co., No. 1 Newhall, Los Angeles Co.	32- 4-16	2,230	suspended
Marble, Willard, No. 1 Van Nuys, Los Angeles Co.	6- 2-16	2,000	suspended
Nuoli Co., No. 1 Newport, Orange Co.	39- 6-10	3,901	redrilling
Mineral Expl., No. 1 Capistrano, Orange Co.	8- 8- 7	4,302	suspended
Saddleback Oil Co., No. 1 El Tora, Orange Co.	3- 6- 7	80	suspended
Placentia Dev. Co., No. 1 Placentia, Orange Co.	31- 3- 9	rig	rigged up
Brown, W. F., No. 1 Atwood, Orange Co.	26- 3- 9	rig	suspended
Bartholomae Oil Co., No. 1 Coyote, Orange Co.	22- 3-10	....	location
Spindle Top Oil Co., No. 1 Salton Sea, Riverside Co.	25- 7-10	3,590	cleaning out
Keeley, H. J., No. 1 Corona, Riverside Co.	21- 4- 6	625	suspended
Great American Pet., No. 1 Chino, San Bernardino Co.	18- 2- 8	2,550	hd. sd. drilling
Great American Pet., No. 2 Chino, San Bernardino Co.	18- 2- 8	943	sd. sh. drilling
McCarthy, C. F., No. 1 Chino, San Bernardino Co.	14- 2- 8	403	suspended
Mason Oil Co., No. 1 Salton Sea, Imperial Co.	1-17-15	680	suspended

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well, location—	S.T.R.	Depth	Status:
Standard Oil Co., No. 1 Goleta, Santa Barbara Co.	20- 4-28	2,601	br. sh. drilling
Monterey Expl., No. 1 Point Concepcion, Santa Barbara	33- 5-33	....	foundation
Duell, O. S., No. 1 Naples, Santa Barbara Co.	7- 4-29	5,132	suspended
Bolsa Chica, No. 1 Coal Oil Point, Santa Barbara Co.	tideland	4,089	suspended
Meganos Oil Co., No. 1 Purisima, Santa Barbara Co.	28- 8-34	rig	rigging up
Cuyama Oil Co., No. 1 Cuyama, Santa Barbara Co.	12-10-27	2,387	suspended
Woodrow Pet., No. 1 Rincon, Ventura Co.	4- 3-24	7,292	suspended
Barcoen Pet., No. 1 Fillmore, Ventura Co.	13- 4-19	2,801	reaming
Hancock Oil Co., No. 1 Fillmore, Ventura Co.	13- 4-19	1,640	O. S. drilling
Oil Ridge Oil Co., No. 1 Fillmore, Ventura Co.	1- 4-19	....	build road
Los Cerritos Pet., No. 1 South Mountain, Ventura Co.	17- 3-20	....	build road
Kneiper & Atha, No. 1 Bardsdale, Ventura Co.	7- 3-19	316	suspended
Williamson & Donhaer, No. 1 Simi, Ventura Co.	36- 3-18	107	hd. sd. drilling
Honolulu Cons., No. 1 Miguelito, Ventura Co.	23- 3-24	7,300	sd. sh. drilling
Continental, No. 2 Miguelito, Ventura Co.	23- 3-24	7,340	O. S. drilling
C. C. M. O., No. 3-A Miguelito, Ventura Co.	23- 3-24	4,166	suspended
Midlands Pet., No. 1 Ojai, Ventura Co.	9- 3-23	7,841	redrilling
Wilshire Oil Co., No. 1 Sulphur Mountain, Ventura Co.	20- 4-21	2,000	br. sh. drilling
Mosher, J. W., No. 1 Santa Paula, Ventura Co.	22- 4-21	1,330	br. sh. drilling
Petro Producing Co., No. 1 Timber Canyon, Ventura Co.	18- 4-20	4,747	plug 1,975 ft.
Las Posas Pet., No. 1 Las Posas, Ventura Co.	22- 3-20	4,092	br. sh. drilling
International Oil Developers, No. 1 Conejo, Ventura Co.	33- 2-20	2,770	set pipe
Hub Pet. Co., No. 1 Gould Hills, Kern Co.	22-29-21	6,840	suspended
Purman, T. H., No. 2 Gould Hills, Kern Co.	27-29-21	335	suspended
General Pet., No. 1 McKittrick, Kern Co.	10-30-21	1,065	circulating
Casa Mira Oil Co., No. 1 Belridge, Kern Co.	29-28-20	3,486	br. sh. drilling
General Pet., No. 1 Belridge, Kern Co.	30-28-21	8,260	suspended
Cumberland Oil Co., No. 2 Devils Den, Kern Co.	17-26-18	3,270	suspended
Holloway, A. S., No. 1 Devils Den, Kern Co.	11-25-18	1,848	suspended
Lincoln Pet., No. 1 Devils Den, Kern Co.	10-25-18	1,702	hd. sh. drilling
Hanna, Tom, No. 1 Devils Den, Kern Co.	25-25-18	3,516	suspended
Pyramid Hills Oil Co., No. 1 Devils Den, Kern Co.	24-25-18	3,974	suspended
Fowler, F., No. 1 Blackwell Corner, Kern Co.	15-26-19	3,170	suspended
Associated, No. 1 Lost Hills, Kern Co.	2-26-20	4,799	formation test
Howells Bros., No. 1 Round Mountain, Kern Co.	32-28-29	700	hd. sh. drilling
Seale, Fred, No. 1 Edison, Kern Co.	5-30-29	....	location
Caravel Pet. Co., No. 1 Edison, Kern Co.	19-30-30	1,801	redrilling
White, L. L., No. 1 Union Avenue, Kern Co.	6-30-28	....	location
Shell Oil Co., No. 2 Mountain View Kern Co.	29-30-29	2,140	hd. sd. drilling
Hogan, Dana, No. 2 Mountain View, Kern Co.	29-30-29	....	location
Bankline Oil Co., No. 1 Mountain View, Kern Co.	4-31-29	3,019	br. sh. drilling
Barnsdall Oil Co., No. 1 Mountain View, Kern Co.	31-30-29	1,010	sd. sh. drilling
Petrol Prod. Co., No. 1 Mountain View, Kern Co.	29-30-29	....	location
Long Beach Pet., No. 1 Mountain View, Kern Co.	29-30-29	312	sd. sh. drilling
Jergins Trust, No. 1 Mountain View, Kern Co.	29-30-29	....	location
Mohawk Pet., No. 1 Mountain View, Kern Co.	30-30-29	5,958	testing
Mohawk Pet., No. 2 Mountain View, Kern Co.	30-30-29	mtl.	building rig
Comanche Oil Co., No. 1 Comanche, Kern Co.	15-32-29	....	location
Badger Oil Co., No. 1 Wheeler Ridge, Kern Co.	31-11-19	3,230	br. sh. drilling
Gatton & Luethe, No. 1 Madera, Madera Co.	22-10-17	2,390	suspended
Russ Oil Synd., No. 1 Kingsburg, Fresno Co.	20-12-11	921	sd. sh. drilling
Bergman, Harry, No. 1 Kingsburg, Fresno Co.	12-12-11	4,148	recemented
Graham & Loftus, No. 1 Raisin City, Fresno Co.	20-15-18	5,910	gr. sd. drilling
Emerich Oil Co., No. 1 Mendota, Fresno Co.	35-13-13	3,801	sd. sh. drilling
Western Gulf, No. 1 S. P., Fresno Co.	3-17-15	1,141	sd. sh. drilling
Hogan, Dana, No. 1 Joaquin Ridge, Fresno Co.	28-20-16	6,003	gr. sh. drilling
Kent & McDonald, No. 1 Carrizo Plains, San Luis Obispo	3-32-22	3,830	suspended
Paso Robles Oil Co., No. 1 Edna, San Luis Obispo Co.	27-27-11	4,191	suspended
Guess, E. B., No. 1 Corcoran, Kings Co.	7-21-21	6,197	suspended
Brown, A. M., No. 1 Cloud, Kings Co.	10-23-19	1,205	recemented
Brown, A. M., No. 2 Cloud, Kings Co.	10-23-19	501	sd. sh. drilling
Dudley Dome Oil Co., No. 1 Dudley Ridge, Kings Co.	9-23-20	3,012	suspended
Knudsen & Schmidt, No. 1 Reef Ridge, Kings Co.	36-23-17	6,873	suspended
Magee & Stone, No. 2 Alpaugh, Kings Co.	33-24-22	3,149	test W.S.O.
Dil-Harp Oil Co., No. 1 Delano, Tulare Co.	25-24-26	1,210	suspended
Cardinal Oil Co., No. 1 Los Banos, Merced Co.	26-10- 9	rig	rigged up
Merced O. & G. Co., No. 1 Chowchilla, Merced Co.	2- 9-16	rig	suspended
Na-Pa Oil Co., No. 1 Griffith, Napa Co.	7- 8- 3	3,742	br. sh. drilling
Oakdale Oil Co., No. 1 Oakdale, Stanislaus Co.	5- 2-10	4,815	hd. sh. drilling
Pacific Northern Oil Co., No. 1 Guinda, Yolo Co.	23-12- 3	4,216	gr. sd. drilling
Buttes Oilfields Co., No. 1 Marysville, Sutter Co.	35-16- 1	2,731	gas—shut in
Buttes Oilfields Co., No. 2 Marysville, Sutter Co.	34-16- 1	3,200	showing gas
Tehama Pet. Co., well No. 1, Glenn Co.	4-22- 5	4,814	gr. sh. drilling
Orland Synd., No. 1 Orland, Tehama Co.	31-23- 3	3,748	suspended
Marker Drlg. Co., No. 1 Orland, Tehama Co.	21-25- 5	3,030	suspended

Productive Area Is Opened 60 Miles Northeast of Mt. Pleasant Field in Eastern Michigan

By GEORGE A. WHITNEY
Staff Correspondent, Central West Fields

MOUNT PLEASANT, Mich., July 24. Alvin H. Weber's No. 1 Stella Wilcox, NE SE Section 24-22n-2e, West Branch Township, Ogemaw County, was brought in with an initial production of 10 bbls. an hour in the upper Traverse formation as the discovery well in the new Eastern Michigan Field, 60 miles northeast of the Mount Pleasant Field.

The No. 1 Wilcox was the second test drilled in this area by Weber and the fifth test drilled in Ogemaw County. The Pure Oil Co.'s No. 1 T. Yeo was abandoned last year after going down more than 5,000 feet. Its No. 1 Mills estate, SE Section 36-21n-3e, was abandoned at 2,682 feet after testing the Traverse, Dundee and Monroe formations.

The Sun Oil Co.'s No. 1 Frank Bernard, NE SE SE Section 16-22n-4e, was a dry hole two years ago. Weber's No. 1 John Bohlinger, SW SW NE Section 26, West Branch Township, was abandoned recently in the Berea sand at 1,307 feet.

Edward Stewart's No. 3 J. B. Richmond, NE SE NW Section 22-13n-1w, Porter Township, Midland County, was also brought in as a 300-bbl. well in the upper Traverse formation, the first commercial production at this level in the Mount Pleasant area. Two other wells on the lease are producing 300 to 400 bbls. in the Dundee, the chief Mount Pleasant producing sand.

Mitchell Well's Production Jumps

Production in the No. 1 E. Mitchell well, second well in the Oceana County oil field, has jumped to 50 bbls. an hour for an estimated daily flow of about 1,000 bbls. as the most important oil development in western Michigan since the Muskegon Field was at its peak three years ago. Originally completed as a 75-bbl. well several months ago, the Mitchell now has become the center of attraction in this part of the State. A third charge of acid is responsible for the increased flow of oil and an estimated flow of 500,000 feet of gas daily.

First opened Monday, July 17, the Mitchell filled two 100-bbl. tanks, all available field storage, in less than four hours before it was shut in. The seventh 100-bbl. tank was set up later with plans for increasing lease storage to 1,050 bbls. for the first 24-hour test.

The Naph-Sol Refining Co. had taken 600 bbls. of the crude to its plant in Muskegon in tank trucks to enable the developers to get an early test of the well's new capacity.

The No. 1 Mitchell is located in SE SE Section 36-15n-17w, Hart Township, Oceana County, about a mile west of the discovery well, a 120-bbl. producer drilled a year ago on the Oscar Weirich lease, NW SE Section 3-15n-16w, Elbridge Township, Oceana County, by Edward Duvall and J. E. Thoren. The No. 1 Mitchell was drilled by James Flanagan and V. M. Voorhees of Muskegon.

Negotiations for immediate drilling of other wells are under way in the field which appears to be the best possibility for a new western Michigan field of importance since Muskegon.

Oil conditions are improving in the Central Michigan Field and new drilling permits issued will keep drillers and tool-dressers busy. Co-operating with the Government in efforts for industrial recovery, a program to increase jobs and "share work" is being adopted by the oil industry.

In Michigan a schedule of three eight-hour shifts on drilling wells, building rigs, etc., is being placed in effect to provide jobs for the state's unemployed oil men. Formerly the 12-hour shift was standard. The program will provide employment for one-third more laborers. While it will impose somewhat more expense on operators, it is expected to bring greater efficiency.

Three completions were reported from the Michigan fields, the best being the Stork Oil Co.'s No. 2, 990 feet from the north and west lines of the Jess B. Richmond farm, SE NW SW Section 22, Porter Township, Midland County, with an initial of 150 bbls., at a depth of 3,570 feet. In Oceana County, H. F. Friesner's test in the northeast corner of the Oscar Weirick farm, NE NE Section 6, Perry Township, was reported a dry hole at 2,150 feet. In St. Clair County Snavely & Craft's test on the William V. Norman farm, NE NE NW Section 22, Grant Township, was given up as a dry hole at 1,800 feet. John Blake and others have a location for a test 330 feet from the south and west lines of the Eugene D. Atkins farm, in SW SW NE Section 13, Clyde Township, same county.

Field Pickups

Vernon Field, Isabella County, is showing activity, attributed to the 100-bbl. producer found by J. W. Leonard in the Chippewa Township Pool. In Denver Township, same county, the Wellman Oil Co. is drilling a test in the southwest corner of the Anton Wezensky farm, SW SW Section 30. Stoddard & Darke are starting a test 330 feet from the south line and 900 feet from the east line of the Elmer E. Brown and wife's farm, SE SW NE Section 16, same township. In Vernon Township, same county, the Mammoth Petroleum Co. is drilling a test in the southwest corner of the Verreth farm, NW SE SE Section 23. W. J. Sovereign, made a location for a test 750 feet from the south line and 21 feet from the east line of the Ann Arbor Railroad right of way, NE SE SW Section 22, Vernon Township. Fred W. Turner and others have a location for a test 990 feet from the south line and 330 feet from the east line of the J. Mahar farm, NE SE NE Section 26, same township.

Few completions will be made for several weeks at least, as none of the drilling operations is nearing the Dundee formation. One of the deepest holes now under way is Thompson & Fortney's No. 1 on the G. A. Currie farm, SW SW SW Section 16, Mount Haley Township, Midland County, which is reported at a depth of 3,100 feet. It is approximately 3 miles north and east of production. Should this test prove a commercial producer it will add a large area of favorable territory.

Two Central Michigan tests are also nearing the pay sand. The Michigan Gas & Oil Co.'s test on the W. Busche farm, in the center of the SW SW Section 10, Wise Township, Isabella County, drilling below 3,500 feet and about 6 miles northeast of the Vernon Field. Much interest is manifested in the outcome of the Columbia Oil & Gas Co.'s test in the northeast corner of the W. Traverse farm, NE NE SE Section 32, Greendale Township, Midland County. It is drilling below 3,250 feet and may require a week to complete the hole. An oil strike on the Traverse lease would throw open to development another wide area in Central Michigan and bring a drilling pay of consequence.

Drilling Permits

Drilling permits were issued to Fred W. Turner and others for No. 1, 330 feet from the north and east lines of the J. Mahar farm, NE SE NE Section 26, Vernon Township, Isabella County; to Fred W. Turner and others for No. 2, 990 feet from the north and east lines of the C. L. Baxter farm, SW NE NE Section 22, Porter Township, Midland County; to T. K. Buzzard, for No. 1, 990 feet from the south line and 660 feet from the east line of the Battle estate, N half SE NE Section 35, Vernon Township, Isabella County; to the Pure Oil Co. for No. 5 on the Mina Narmore farm, 990 feet from the south line and 2,310 feet from the west line of the farm, SW Section 15, Porter Township, Midland County; for No. 2, 990 feet from the south line and 2,310 feet from the east line of the State-Porter farm, N half SE Section 15, Porter Township, Midland County; for No. 2, 330 feet from the south line and 1,650 feet from the east line of the C. L. Baxter farm, SW SE Section 15, Porter Township, Midland County; for well No. 2-A, 1,040 feet from the north line and 660 feet from the west line of the Ann Corning estate, in the NW Section 1, Jasper Township, Midland County; for No. 1, 330 feet from the south line and 1,980 feet from the east line of the quarter section on the Joseph Yatts farm, SW Section 35, Greendale Township, Midland County; for No. 9, 1,650 feet from the north and west lines of the Charles Mullett farm, N half NE and SW NE Section 15, Greendale Township, Midland County, and for No. 10, 2,310 feet from the north line and 1,650 feet from the east line of the Charles Mullett and others, N half NE and SW NE Section 15, Greendale Township, Midland County; to the Oil & Gas Corp. for No. 1, 346 feet from the north line and 990 feet from the west line of the E. F. Fisher farm, NE NW NE Section 17, Bruce Township, Macomb County; to W. J. Sovereign for No. 1, 750 feet from the south line and 21 feet from the east line of quarter section, in the NE SE SW Section 22, Vernon Township, Isabella County; to the Gordon Oil Co. for No. 1, 330 feet from the north and east lines of the L. Good farm, NE NE SE Section 17, Porter Township, Midland County; for No. 3 on the Muscott and others farm, NE NW NE Section 17, Porter Township, Midland County, and for No. 4, 990 feet from the north and east lines of the Muscott and others farm, SW NE NE Section 17, same township and county; to the Stork Oil Co. for No. 1, 330 feet from the north line and 990 feet from the west line of the C. E. Baxter farm, NE NW NE Section 22, Porter Township, Midland County; to J. Mark Harvey, trustee, for No. 1, 350 feet from the north line and 1,650 feet from the east line of the Hattie M. Hodge farm, NE NW SW Section 18, Porter Township, Midland County.

A permit issued May 16 to Flanigan & Voorhees has been canceled and in its place one has been issued to James E. Flanigan for No. 2, 270 feet from the south line and 315 feet from the east line of the E. Mitchell farm, SE SE SE Section 36, Hart Township, Oceana County.

CENTRAL WEST

There is a noticeable increase in the development work over portions of the Central West area, comprising the Lima, Indiana, Central Ohio, Illinois and Kentucky Fields, although no completions were reported in Indiana, Illinois and Kentucky. One of the attractive spots for drilling at this time in the old Lima Field is centered near Upper Sandusky, in Wyandot County. At this time the Wyandot Field is showing the most activity, especially in Crane Township of that county. The Upper Sandusky Oil & Gas Co.'s No. 2 on the N. and H. Saltzman farm, Section 28, Crane Township, was drilled in recently and produced 24 bbls. along with a fair volume of gas at 1,328 to 1,334 feet, but since then the well showed a production of 200 bbls. a day and approximately 1,000,000 feet of gas. Keiner and others' No. 3 on the Louis Brandt heirs farm, Section 34, same township, produced an initial of 60 bbls. from 1,360 to 1,381 feet. Crane Township Oil & Gas Co.'s No. 1 on the Delbert Smith farm, Section 33, same township, produced an initial of 75 bbls. from 1,347 to 1,370 feet. Robert W. Kirk and others' test on the B. C. Root farm, Section 29, Crane Township, shows an encouraging gas volume at 1,317 to 1,329 feet. F. W. Keiner and others are drilling No. 1 on the Gotlieb Seiler farm, Section 34, same township. Ferdell and others are spudding a test on the Mary E. Simpson farm, Section 20, same township. Ohio Fuel Gas Co. is drilling a test on the Ira Schoenberger farm, Section 20, Crane Township. McPheron and others are drilling No. 1 on the A. E. Myers farm, Section 3, Crane Township, same county.

Dewey Oil & Gas Co. is drilling No. 2 on the Hattie Martin farm, Section 33, Clinton Township, Seneca County, and should reach the pay sand within a few days.

Murphy & Sons are drilling a test on the L. H. Houpt farm, Section 8, Tymochtee Township, Wyandot County, and if it comes in a commercial producer, it will add much good looking territory for further development of the county.

In Williams County, in the northwest part of Ohio, Charles Anderson drilled a light gas well at a test on the Spangler Candy Co.'s property at Bryan and he is drilling a test for gas on the Mel Kerr property, also in the Bryan area. Gas is found in the Bryan area at around 300 feet.

Five miles south of Lima the Kelley Oil & Gas Co.'s test on the Mary M. Mosier farm, Section 25, Shawnee Township, Allen County, reported for 3 bbls. at a total depth of 1,280 feet.

CENTRAL OHIO

The Central Ohio Field, which is active, reported only four completions during the week, three being gas wells and one a dry hole. The dry hole was drilled by Fulton and others in No. 2 on the Ida Thompson & Co.'s farm, Section 6, Union Township, Belmont County, at a total depth of 970 feet. Cable & Frye drilled in a light gas well in No. 1 on the Peter Miller farm, in Berlin Township, Holmes County, at a depth of 4,060 feet.

Cunningham Natural Gas Co. drilled in a fair gas well in a test on the F. and A. Willaman farm, Section 17, Plain Township, Stark County, at a depth of 4,469 to 4,494 feet. In Athens County, the Ohio Fuel Gas Co. drilled in a light gas well in No. 1 on the Arthur A. Cole farm, Section 4, Carthage Township, in the Keener sand at 1,300 feet.

In Summitt County the East Ohio Gas Co. has started drilling on No. 3 on the Everett Bexler farm, Section 17, Green

Township, also No. 1 on the J. H. Wertz farm, Section 31, same township. The same company's No. 2 on the John Wenhart farm, Section 20, same township, is drilling below 3,750 feet.

Brendel Producing Co. is drilling below 4,400 feet in a test on the David and Nora Frederick farm, Section 10, Marlboro Township, Stark County. The same company is drilling below 300 feet in No. 1 on the James H. McDowell farm, Section 16, same township, and spudding in No. 1 on the A. and L. Stephens farm, Section 9, same township. It is rigging up for No. 1 on the Valentine L. Ney farm, Section 10, same township.

In Stark County the Hoover Development Co. is drilling below 3,100 feet in No. 2 on the Hoover Co. property, Section 18, Plain Township. White and others are spudding in No. 1 on the Forest Hill Cementery, Section 20, same township, and are drilling below 1,300 feet in No. 1 on the Jacob Isler farm, Section 25, same township. The same company is drilling below 4,150 feet in No. 1 on the T. and H. McDowell farm, Section 16, also drilling below 4,200 feet in No. 1 Paul B. Belden farm, Section 18, same township. The same company is drilling below 4,000 feet in No. 2 on the Strausser farm, Section 18, and below 1,800 feet in No. 1 on the Stewart Bixler farm, Section 9, same township.

Lorain County

Wittmer Oil & Gas Co. is building a rig for No. 1 on the H. W. Ingersoll farm, Lot 86, Grafton Township, Lorain County. Minor and others are building a rig for No. 3 on the Mathias Myers farm, Lot 32, Ridge Township, same county. Dempsey and others are drilling below 1,525 feet in a test on the H. E. Piper farm, Lot 63, Pittsfield Township, same county.

McClay Brothers are drilling below 4,125 feet in a test on the Louis V. Miller farm, Section 19, Freedom Township, Portage County. Johnson and others are drilling below 2,000 feet in a test on the Gail King farm, Lot 39, Charlestown Township, same county.

Johnson and others are shut down at 2,900 feet in a test on the William Kain farm, Lot 59, Newton Township, Trumbull County.

In Coshocton County, Clark Township, the Ohio Oil Co. is rigging up for drilling No. 5 on the Rhode heirs farm, Section 8. Wiser Oil Co. is drilling below 2,500 feet in a test on the Patterson & Crawford farm, Section 17, Perry Township, same county.

Mid East Oil & Gas Co. made a location for No. 1 on the R. A. and R. D. Amerine farm, Section 30, Muskingum Township, Muskingum County.

McClay Brothers are drilling around 2,500 feet in No. 2 on the Fern Smith farm, Section 17, Fallsburg Township, Licking County.

Ohio Fuel Gas Co. has a rig in for No. 1 on the Paul Bridenstine farm, Section 14, Jackson Township, Ashland County.

In Knox County the Preston Oil Co. made a location for No. 3 on the A. J. Beatty farm, Section 21, Butler Township. Pure Oil Co. is drilling No. 2 on the J. D. Reed farm, Section 2, Jackson Township. H. E. Perkins is drilling No. 2 on the H. E. Perkins farm, Sections 13-18, Monroe Township, same county.

Carpenter & Glazier are drilling No. 17 on the Curtis farm, in Fractional 33, Berne Township, Athens County. Twenty-Five Associates Co. is drililng No. 2 on the Caloway farm, Section 17, same township. C. W. Nuzum is drilling No. 1 on the Viola V. Tuttle farm, Fractional Section 3, same township. John Bowman is drilling No. 4 Lovell farm, also in Berne Township, same county.

NEW COMPANY ORGANIZED

CHATHAM, Ontario, July 24.—Lester and Frank Patrick, associated with the Cariboo Oil Co., which has been drilling near Australian, B. C., have organized Region Mines, Ltd., to develop oil, gold and silver properties in the same area. The new company is incorporated for $3,600,000. Frank Patrick is president and Lester Patrick vice president.

Best Well in Lost Run Pool, West Virginia, Is Brought In on the Boehm and Neeley Farm

By STAFF CORRESPONDENT

PITTSBURGH, Pa., July 22.—In Lost Run Pool, Clay district, Ritchie County, West Virginia, Frank Finley and others completed a second test on the Boehm and Neeley (Strickler heirs') farm and brought in the best well so far in that pool. It produced 530 bbls. the first 24 hours. Like the others, it was completed in the Big Injun sand.

The Boehm and Neeley lease is about 1,500 feet northwest of the Hinton farm on which the discovery well was located and is on the line between Harrisville and Ellensboro. The first test on this farm was initially reported as a 25-bbl. well which increased slightly as it was deepened.

The discovery well on the Hinton farm came in at 60 bbls. a day and increased to 300 bbls. On the Catherine Ball farm, about 4,000 feet northwest of the Hinton farm, a test proved dry. On the Michael Moran farm, about 1,500 feet northwest of the Hinton farm and offsetting the Boehm and Neeley farm, a test likewise proved dry. On the Frank R. Ball farm, about 400 feet northwest of the Hinton farm, the Richards Farm Oil Co. completed a 25-bbl. well. Three-quarters of a mile east of the Hinton farm, a test on the A. H. Adams farm turned out to be a light gas well. Offsetting the Hinton farm to the south and east, the Hinton Farm Oil Co. completed a 150-bbl. well.

The Hinton Farm Oil Co. is starting another test on the L. E. Robinson farm. The Richards Farm Oil Co. has made a location for a second test on the Frank R. Ball farm.

The recent 15-cent advance in all Pennsylvania Grade crudes is expected to assist in reconditioning leases and wells choked by 18 months of curtailment. There were nine completions in the Eastern Fields. Four were producers with an initial production of 537 bbls., and five were gas wells, one more than fair.

WEST VIRGINIA

Two additional producers were completed in West Virginia. In Wirt County, H. M. Burke completed No. 8 on the John B. Showalter farm in Clay district in the Injun sand at 1,066 feet. It is rated at 5 bbls. a day. In Pleasants County, Dinsmoor & Co. completed No. 5 on the E. J. Patterson farm in Washington district. It was completed in the Cow Run sand and is good for 1 bbl. a day.

In Cabell County, in Guyandotte district, Adkins & Marsh completed a test on the C. M. Watts lease in the brown shale at 2,853 feet. It is rated at over 2,000,000 feet a day.

In Calhoun County, Creed Barker and others completed a test on the J. Lawson Kelley farm in Sherman district. It reached the Injun sand at 2,096 feet and will make a small gas well.

In Lincoln County, the Kanawha Gas & Utilities Co. drilled a second test on the Nona Johnson farm in Sheridan district. It is a light gas well in the Berea sand at 2,334 feet and may be drilled deeper.

In Mason County, John Miller and others completed a test on the C. W. Petty farm in Waggoner district. It is a small gas well, about 50,000 feet a day, in the Second Cow Run sand. It is located about 450 feet north of the Berea Oil & Gas Co.'s test on the Smith and Petty lease along the Ohio River.

Drilling in West Virginia

In Pleasants County, Dinsmoore & Co. have made a location for a test on the Delia Cornell farm in Jefferson district. In Murphy district, Ritchie County, about half way between Smithville and Beatrice on the Hughes River, Floyd Rexford and others have a rig standing for a test on the John Warner farm. The King Knob Oil Co. is drilling at 650 feet in a test on the H. C. Allen farm. Deem & Overton are rigging up for a test on the R. A. Overton farm, same district, and Bode & Stoffle reached 1,200 feet and shut down in a second test on the John Coyle farm. In Union district, Pleasants County, L. C. White and others are starting No. 3 on the State Farm.

In Calhoun County, F. F. McIntosh is building rig for a test on the S. A. Hays farm in Lee district. The same operator has a location for a test on the F. L. Haymaker farm, same district. In Washington district, Grant Fowler is down 1,760 feet in a test on the O. W. Grove farm and has completed his rig for a test on the Orval Postlethwait farm. In Lee district, Lowther & Shumm have part of the material on the ground for a test on the Rufus and Maude Mace farm. In Center district, Everett Starcher and others are down 1,280 feet in a test on the C. C. Starcher farm, and Starcher & Richards have shut down for repairs at 1,485 feet in a test on the Chenowith and Edman lease.

In Sherman district, Poling & Mollahan are fishing for the tools in their test on the F. M. White farm at a depth of 1,835 feet. H. B. Scott is drilling at 1,380 feet in a test on the Beall and Wilson lease, same district, and Lyle S. Ayers and others have the material on the ground for a test on the Kate Garritson farm. In Sheridan district, Cain & Rothwell spudded and had to shut down for water in a test on the Leroy Jones farm. Ira Haught and others are reaming at 1,700 feet in No. 3 on the Alva Elder farm. In Sherman district, C. W. McCall and others are drilling their No. 2 on the Hamilton, Jarvis & Garrett lease deeper and have reached 2,150 feet.

In Roane County, Charles Despard and others are down 1,525 feet in a test on the Charles Starcher farm in Smithfield district. In Curtis district, the Big Four Drilling Co. has spudded in and started drilling a test on the W. S. Fouty and others' lease.

In Monongalia County, the Chartiers Oil Co. is rigging up for a test on the Thomas Williams heirs' farm in Clay district. In Marion County, the Victor Oil & Gas Co. is down 1,540 feet in a test on the Charles H. Freeland farm in Mannington district. In Green district, Wetzel County, the Harrison Ritchie Oil & Gas Co. is drilling its No. 2 on the D. M. Wade farm of 80 acres down from the Big Injun sand to the Gordon sand.

In Lincoln County, the Turtle Lick Oil & Gas Co. has reached 1,435 feet in its well on the George Thompson farm. On the Henry Chandler heirs' farm, Pridemore & Adkins are down 1,180 feet in a test. Both are in Jefferson district.

In Wayne County, the Cisco Drilling Co. is shut down at 3,137 feet in a test on the Sampson B. Bailey farm in Ceredo district and the hole will be shot. In Union district, the West Virginia Gas Corp. has reached 1,905 feet in a test on the Henry Adkins farm.

In Cabell County, the Copeland Gas Co. has reached the brown shale in a test on the E. N. Waugh farm in Guyandotte district and is placing the shot at 1,925 feet. Swanson & Martin are drilling at 2,135 feet on the J. T. Tubert farm; the Graham Gas Co. is down 1,965 feet on the S. P. Hager farm; Petry & Borders are down 1,700 feet on the Shelby Johnson farm; Ross Campbell is drilling at 1,120 feet on the Juliette Enslow farm. All are tests in Guyandotte district.

In McComas district, the Oraann Gas Co. has the material on the ground for a test on the George H. Midkiff farm, and the West Virginia Gas Co. is rigged up for a test on the H. L. Day farm. In Union district, George W. Shipes and others have shut down at 1,175 feet in a test on the Callie Massey farm.

In Boone County, the Pure Oil Co. is down 414 feet in No. 60 on the Federal Coal Co. land in Sherman district, and is down 713 feet in a test on the A. M. Prichard lease. In Kanawha County, this company has reached 2,366 feet in a test on the Cheylan Coal Land Co. in Cabin Creek district.

In Clay County, Godfrey L. Cabot is down 1,925 feet in a test on the Bell Creek Land Co. tract in Pleasant district, and in Kanawha County this operator is drilling at 1,180 feet in No. 41 on the A. H. Huntington lease in Cabin Creek district.

SOUTHEAST OHIO

Completions from Southeast Ohio were light again. Only two wells were completed. In Noble County, in the W half of Section 15, Elk Township, Roman L. Smithberger completed deepening a test on the Albert E. Biedenbach farm and has a gas well in the Maxon sand at a depth of 1,180 feet. It is good for about 50,000 feet a day. This well was formerly a small producer in the Buell Run sand having been drilled about 25 years ago.

In Washington County, the Martin Oil Co. completed a test on the M. A. Martin farm, Lot 1,078, Palmer Township. It was drilled in the First Cow Run sand at 644 feet and will make about a 1-bbl. pumper.

SOUTHWEST PENNSYLVANIA

One important test was completed in Southwest Pennsylvania. In Amwell Township, Washington County, the Carnegie Natural Gas Co. completed its well on the Mrs. Francis Menzer farm in the 30-foot sand and has a gas well estimated good for 500,000 feet a day. The gas was found at 2,784-89 feet, with the Pittsburgh coal at 757 feet. This farm lies to the northeast of the Hazlett producers in the Fifth sand found around 2,960 feet. In case of exhaustion of gas, the well can be drilled deeper to the Fifth sand as the producer on the Morton is to the north.

In this township the Union Gasoline & Oil Co. is building a rig for a test on the Leroy Van Kirk farm close to the Mary B. Lindley farm and the Hazlett farm. The same company has made a location for a test on the F. B. Grimes farm. In North Franklin Township, E. H. and J. B. Tague are down 385 feet in No. 4 on the Adaline McKennan heirs' farm.

In Greene County, Earhart & Co. are down 1,308 feet in a test on the Clar Baldwin farm in Richhill Township. In Dunkard Township, the Convex Glass Co. is rigging up for a test on the Samuel Morse farm. In Springhill Township, Snyder & Null are drilling deeper and have reached 3,000 feet in a test on the Barney Renner farm. This was a former producer from the Injun sand and owned by the Dunn Mar Oil & Gas Co. It will probably be drilled down to the Bayard sand.

In Fayette County, the Carnegie Natural Gas Co. is cementing the Pittsburgh Coal at a depth of about 450 feet in a test on the H. H. Wells farm in Jefferson Township.

OIL MAN ROBBED

CHATHAM, Ontario, July 24.—Rhea Mosom, reported to be a wealthy Laguna, Calif., oil man was found in Mewata Park, Calgary, with his right arm lacerated and he told of being robbed of $10,000. Police are investigating.

Numerous Drilling Activities Started in Rocky Mountain Area; Suit Filed Against Oil Tax

By TOLBERT R. INGRAM
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., July 24.—Suit has been filed at Santa Fe to enjoin the New Mexico Tax Commission from collecting the 4-cent severance tax imposed on oil producers by the legislature on the grounds that the act is unconstitutional. Two locations were made in the Hobbs Pool, one in Eddy County and one in virgin territory in Chaves County. The Norins Realty, Inc.'s test in Bernalillo County was abandoned and rig skidded for another well.

The oil sand unexpectedly encountered by the Rocky Mountain Gas Co. on the Craig Dome in Colorado failed to show for a commercial producer when tested. The Continental Oil Co.'s Tercio test in Las Animas County, found water in the Dakota.

In Wyoming, a deal was concluded to reopen the State's first oil field, in which wells at 400 feet average 1 bbl. per day, and to drill a test to the granite. The Mutual Oil Syndicate's No. 2 Boyer failed to find the Shannon sand on the Midway Dome and was abandoned. An offset to the deepest well in the Rocky Mountain area is being started on the Badger Basin Dome by the Resolute Oil Co.

Four new locations were reported in the Cut Bank Field in Montana, one well was completed for 50 bbls. and a diagonal offset to No. 1 Miller, the only flowing well in the field, looks like a small pumper.

Two wildcats in South Dakota are resuming and one new operation was reported in Utah.

NEW MEXICO

Flynn, Welch & Yates, a firm operating in the Artesia Field, filed an action in the District Court at Santa Fe seeking to enjoin the state tax commission from enforcing the severance tax law enacted by the legislature a few months ago. This law placed a tax of 4 cents per barrel on crude oil production. A petition for the reference of the measure to the voters subsequently was filed with the secretary of state and this automatically suspended the law for the present. The Artesia firm attacks the law on two constitutional grounds. The petition alleges that the measure calls for an excise tax when in reality it is a property tax and the second contention is that the law imposes a fixed tax on tangible property without consideration as to its value.

Eddy County

A new location in the Artesia area is Van P. Welch, Jr., and others' No. 1 State, NW NE SE Section 22-17-28. Flynn, Welch & Yates' No. 66 State, NW SE SE Section 30-18-28, is drilling at 400 feet.

The Western Drilling Co.'s No. 2-A Green, C SW NE Section 29-17-29, Jackson area, which showed for 101,000 feet of gas at 2,227-63 feet, is shut down at 2,336 feet in lime. C. H. Lockhart and others' No. 2 Root, C SW SW Section 7-17-30, Maljamar area, is drilling at 2,260 feet in shale and anhydrite and had a gas show at 2,037-40 feet.

Ralph Spearow and others' No. 1 McClellan, SW NW NE Section 22-22-23, which is testing the thick lime formations in western Eddy County, is drilling at 3,050 feet in gray lime and had another gas show at 2,950 feet. Same firm's No. 1 McIntyre, NW NW Section 27-23-25, is rigging up cable tools. The firm has 100,000 acres on the two structures.

Lea County

Two new locations were released in the Hobbs Pool by the Stanolind Oil & Gas Co. Both are in the southeastern part of the field, south of the new Hobbs townsite and are outside wells. They are No. 11 Capps, C NW SW Section 3-19-38, and No. 26 Byers, C SE NW Section 3-19-38. They offset each other. The only drilling well, which is a near completion, is the Shell Petroleum Corp.'s No. 4-B McKinley, SW NE SW Section 20-18-38, which cemented the 7-inch at 4,089 feet with 250 sacks and is waiting.

In the Lea area, the Texas Co.'s No. 3-A Lynch, C NW NE Section 34-20-34, is drilling in sand at 3,622 feet. It had a show of oil at 3,614-22 feet which tested 1 bailer per hour. It also had a show at 3,532-49 feet. Cranfill & Reynolds' No. 4 State, C NW NE Section 2-21-33, is drilling at 1,435 feet in red rock.

In the South Eunice area, Carter and Continental Oil Co.'s No. 1 State, C NE NE Section 28-22-35, has been delayed in spudding by a shortage of water and is testing the No. 2 water well at 1,225 feet. The first well made 850 bbls. of water.

In the Jal area, E. B. Guess' No. 1 Conditt, C SW SW Section 12-25-36, recemented the 10-inch at 530 feet and is waiting.

Chaves County

A new location is George Etz and others' No. 1 Duke, C NE SE Section 14-8s-26, in the Elkins district, about 5 miles west of a well drilled to 5,040 feet on the Elkins anticline several years ago which had both oil and gas shows.

The Warman Oil Trust's No. 1 Weldon & Hoar, NW cor. SE Section 9-

(Continued on Next Page)

Nordon-Roney's Twin River Discovery Making 50 Bbls. Oil, With 5,000,000 Feet of Gas

By VICTOR LAURISTON
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, July 24.—On the Twin River structure, southeastern Alberta, Nordon Corp. and C. A. Roney's joint No. 2 Twin River test, LSD 11, Section 2-2-20w4, shows a tested production of 50 bbls. a day of clean 31 Be. crude with a gas flow around 5,000,000 feet. The well was to be shot to increase production, after which tubing will be run and a second production test made. The oil is reported free from water. Definite commercial production in this well opens a new potential field in the border area south of Lethbridge.

North Turner Valley

In the North Turner Valley area, Model Oils' No. 2, LSD 16, Section 22-20-3w5, is drilling more than 550 feet in the lime at a depth below 6,074 feet. The well has some light crude production with gas from several horizons in the lime, but hardly enough to lift the oil. It is planned to drill through the brown limestone to the white lime, which may be 1,000 feet in the Madison.

Central Turner Valley

In the Central Turner Valley Field, McLeod Oil Co.'s No. 1, LSD 16, Section 1-20-3w5, which was off production, has been cleaned out, bringing back a flow of 7,000,000 feet of wet gas from the deep lime. The test may be drilled a little deeper to increase production.

New McDougall-Segur Oil Co.'s No. 6, LSD 11, Section 12-20-3w5, is reported running casing below 3,000 feet, after getting a further show of light crude at 2,860 feet. Previous shows were met at 2,530 and 2,795 feet. The test, which is logging a little deeper than other wells in the same area, is thought to be close to the main light crude horizon of the McDougall-Segur sands.

Okalta Oils' No. 4, LSD 8, Section 1-20-3w5, is reported redrilling below 800 feet on a test of the light crude horizons above the lime. The test was previously drilled to 1,600 feet and has been standing for years. On resuming work recently it was found the hole had caved or bridged back to 600 feet, and on redrilling it was found the original hole was crooked, and the new hole has not touched it at all. A 13⅜-inch hole is being made to the crude oil sands.

Mercury Tract

In the Mercury tract, Associated Royalties' No. 1 Spray, LSD 9, Section 5-19-2w5, is reported resuming drilling after a difficult fishing job at 3,340 feet. In the same section, Miracle Oils' No. 2, LSD 16, has passed through the Dalhousie formation and is drilling close to the lime at around 5,879 feet.

South Turner Valley

In the far south end of the South Turner Valley Field, Becker Syndicate's No. 2 Anaconda, LSD 15, Section 28-18-2w5, is reported running three tours and drilling below 3,000 feet, after cementing 13⅜-inch casing. The test got a good gas show around 2,500 feet. It is planned to land the 10-inch casing in the Dalhousie sand and continue to the crude naphtha horizon of the lime if satisfactory light crude production is not found in the Dalhousie.

Pacalta Oils' No. 1, LSD 7, same section, is drilling below 1,500 feet after setting 16-inch casing at 1,200 feet, and logging close to Becker's No. 2 Anaconda. Publix Oil & Gas Co.'s No. 1, LSD 8, same section, has spudded in on the Merland lease and is reported running 21-inch pipe to 110 feet. It is intended to take light crude production from the Dalhousie sands and possibly drill a second test to the deep lime. Mar-Jon Oil Co.'s No. 2, LSD 10, same section, is drilling below 160 feet. It is reported that Mar-Jon-Freehold's No. 1 producer in the same section is making around 8,000 bbls. a month of crude naphtha from the lime, making it the major single producer in the Turner Valley Field.

Sterling Royalties' No. 1, LSD 1, Section 33-18-2w5, is reported standing cemented after making water shutoff. Sunburst-Mid-Royal's No. 1, LSD 14, Section 28-18-2w5, is reported rigged up. Livingston Syndicate's No. 1, LSD 5, Section 34-18-2w5, is resuming at 2,160 feet.

Farther south, Union Drilling Co.'s No. 1, LSD 8, Section 21-18-2w5, is reported cemented for water shutoff at 480 feet. A heavy water flow was encountered in this sand, and the well may have to stand a couple of weeks.

Hunter Valley Test

In the forest reserve area west of Olds, Hunter Valley Oil Co.'s No. 1, Township 31-10w5, is drilling near the Blairmore formation below 1,250 feet, with some increase in gas shows, the first of which were met at 980 feet. There is a possibility of production in the Blairmore around 1,500 feet.

Oil City Test

In the old Oil City Field, Waterton Lakes Park, Oil City Royalties' No. 1, Section 30-1-30w4, is reported drilling around 505 feet in a hard formation.

Reserve Dome Test

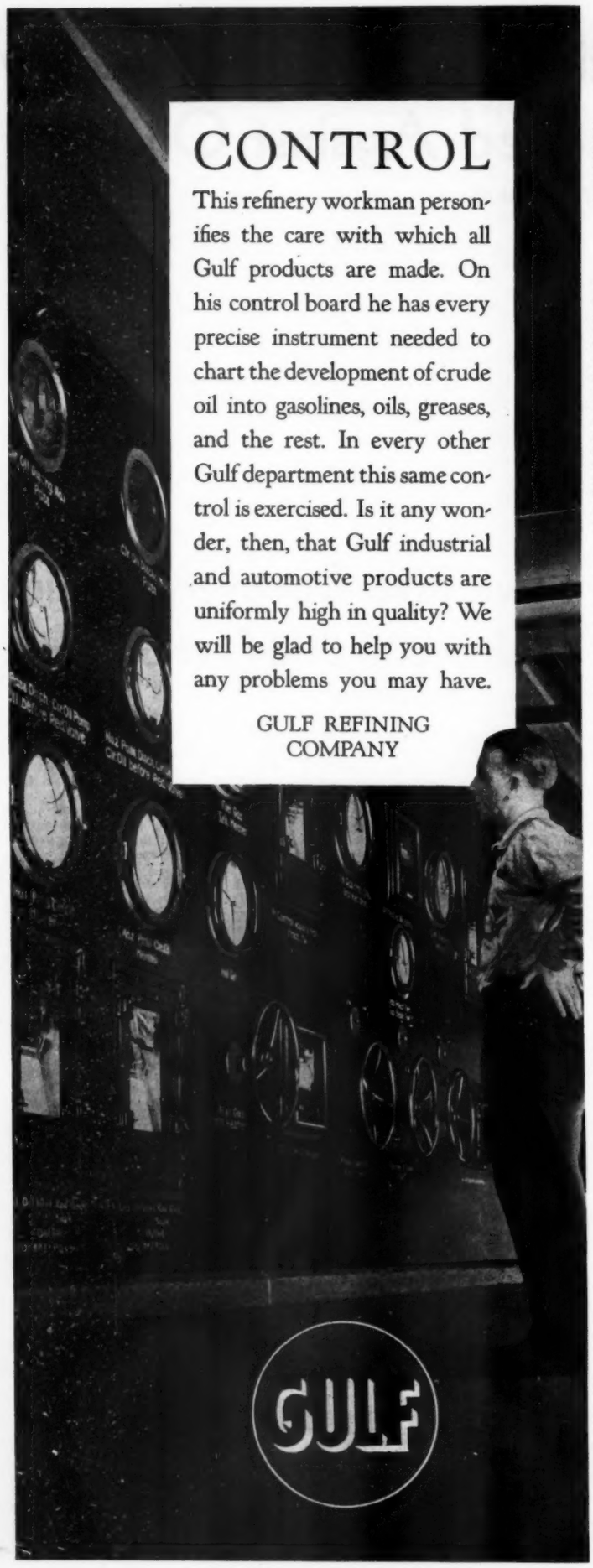
On the Alberta end of the international Reserve Dome structure, east of Coutts, Rialto Oils' No. 1 has been located in LSD 4, Section 15-1-9w4, northeasterly across one section from Mayland Southern's No. 1 in LSD 13, Section 4-1-9w4. The latter test, completed over a year ago, got gas in several horizons but was abandoned at 3,000 feet when it failed to get oil.

Canadians in Cut Bank

In the Cut Bank Field, Commonwealth-Fulton's No. 1 Haggerty is reported pounding on iron at 2,926 feet after cementing. Sheldon-Burden Co. is moving the drilling rig used for Commonwealth Petroleums' No. 1 Milk River test in Alberta to Cut Bank, for use on a contract for the Texas Co.

British Columbia Operations

In the Sage Creek district, southeastern British Columbia, Columbia Oils' No. 1, which spudded in recently, is drilling with cable tools. Fred Racher and Alex and David Holmes are handling the drilling under the supervision of George W. Brake, general manager of the company. The test is running three tours.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Rocky Mountain Area

(Continued from Preceding Page)

14s-25, Blackdom district, is shut down at 1,223 feet in lime.

Bernalillo County

Norins Realty Co., Inc.'s No. 1 Pajarito grant, NW cor. NE Section 22-9-1e, was abandoned at 5,104 feet and rig was skidded 200 feet to the northwest for No. 2, in the NW cor. NW NE Section 29-9-1e. No. 1 had a light show of oil at 3,834 feet.

COLORADO

Moffat County

The Rocky Mountain Gas Co.'s No. 1 Eberle, SE SW SE Section 9-6n-91, Craig Dome, which stopped to test a show of oil at 1,290 feet, will continue to the objective gas sand at 2,800 feet. The 10¾-inch was cemented at 1,290 feet to shut off a flow of water estimated in some reports at 25,000 bbls. per day, and test the oil show. This test indicated that the well would make around 10 bbls. of oil per day. The crude has a paraffin base, but appears to be only 18 to 20 degrees gravity, with almost no gas. The objective in this well is a gas sand in the lower Mesa Verde. There was no reason to expect an oil show at its present depth and little importance is attached to the discovery.

The Mountain Fuel Supply Co.'s No. 2 Florence Wilson, C NE NE Section 22-12n-100, Hiawatha district, the deep test to 7,000 feet, or more, is coring and drilling at 4,481 feet. It is now almost 2,000 feet below the heavy gas sand from which the field is producing. Same company's No. 1 Wheeler, SE NW NW Section 30-12-100, is drilling at 585 feet.

The Mountain Fuel Supply Co.'s No. 1 Hatch, C NW SW Section 9-11n-101, Sugarloaf district, is drilling at 2,940 feet. The location is close to a major fault and at its present depth it is believed to have drilled through this fault and to have a chance for production in the Cretaceous. It had several shows above 1,300 feet.

The Texas Co.'s No. 1 Iles, SE NW Section 23-4n-92, Iles Dome, is building 122-foot rotary derrick and rig.

Rio Blanco County

The California Co.'s No. 1 California-Raven, C NW SE Section 30-2n-102, Rangely Dome, is swabbing through tubing, but the company is releasing no figures on what the well is making. The tubing is below 5,900 feet. Before being given another shot of 1,000 quarts and with the tubing at 2,700 feet, it was reported making around 400 bbls. per day.

Routt County

The Mid-Colorado Petroleum Co.'s No. 1 Omholt, NE cor. SE Section 29-4n-87, Fish Creek, which has been standing for some time at 2,250 feet waiting for pipe, is reported to have arranged for a string of 10-inch from a well drilled by the late Harry Hynds in the Tow Creek Field. It had a show for 3,000,000 feet of gas in the Frontier, topped at 1,917 feet.

Huerfano County

S. W. Pressey's No. 1 Ojo, SW NE Section 10-29-69, Oak View district, is drilling at 570 feet in black shale.

Park County

The South Park Oil & Gas Co.'s No. 1 Esche, SE cor. NW Section 5-9s-76, Como district, is shut down at 2,465 feet. It has been delayed for a long time with casing trouble and a fishing job and rig may be skidded and another hole drilled. The South Park Oil Co.'s No. 1 Milligan, NE cor. SE Section 13-8s-76, Jefferson district, is resuming at 3,042 feet after mudding the 4¾-inch to shut off water.

Boulder County

Consolidated Smelting & Metals Co.'s No. 1 Blubaugh, SE cor. Section 20-3n-70, Lyons district, landed the 4¾-inch on bottom at 840 feet and mudded same. It is bailing to test shutoff.

Las Animas County

Continental Oil Co.'s No. 1 Maxwell grant, NE NW NE Section 29-34-68, Tercio district, is bottomed in the objective Dakota at 1,348 feet with 900 feet of water in the hole.

Prowers County

The Shastatex Oil & Gas Co.'s No. 1 Lotus Oil, NW NE NE Section 15-23-46, Lamar district, is drilling at 1,600 feet.

WYOMING

Crook County

A deal was reported closed the past week whereby a syndicate of Rapid City, S. Dak., men acquired control of 5,000 acres in the Rocky Ford Field in Crook County. They will clean out and attempt to produce a number of shallow wells and drill a test to the granite. The field is the oldest in Wyoming and has 24 wells estimated capable of making 1 bbl. each per day from the Sundance at 400 feet. The new interests will work over these wells and experiment with acid treatment in an effort to make them commercial. The deep test will be drilled in the N NE SE Section 13-52-62. L. L. Jackson, an operator in the Osage Field, will be in charge of the deep test and part of the equipment is now on the ground. The pool is on the west flank of the Redwater structure and the oil is found in a syncline. This is supposed to be due to a fault traversing the field which serves as a closure.

Weston County

The Lincoln Oil Syndicate's No. 1, SW cor. SE Section 10-46-64, Osage Field, has resumed after being idle for several months, and has set the 6¼-inch at 1,700 feet. The Riggs Oil Co.'s No. 3, SE NE Section 16-46-64, is drilling at 750 feet, and the Wyoming Oil & Gas Co.'s No. 19, SE NW SE Section 19-46-63, is waiting on cement. The Yellowstone Oil Co.'s No. 4 Butcher, NW Section 23-46-64, is shut down, and the Federal Oil Co.'s No. 5, SE cor. Section 15-46-64, is building rig.

Niobrara County

J. M. Huber Corp.'s No. 2 Western States, NE SE SW Section 27-36-65, Lance Creek, is drilling at 3,575 feet. It is an old well in the top of the Lakota being deepened from 3,565 feet.

Natrona County

The Mutual Oil Syndicate's No. 2 Boyer, NE SW NE Section 23-35-79, Midway Dome, was abandoned at 2,475 feet and failed to pick up the Shannon sand. This is one of a series of tests to the Shannon with portable rotary to work out the structure before making location for another deep well.

The Lakota Oil & Gas Co.'s No. 1, C NW Section 4-36-81, Segment Basin, is rigged and ready to spud.

The Triangle Oil Co.'s No. 1 Ames, SE cor. Section 29-36-85, North Boone Dome, was abandoned at 812 feet due to casing trouble. Rig was skidded 400 feet to the north for No. 2.

Carbon County

Ohio Oil Co.'s No. 1 A. J. Hazlett, NE NW Section. 34-23-79, Allen Lake, recemented the 10¾-inch at 1,689 feet and at 1,700 feet showed for 500,000 feet of gas in a sand in the Morrison. If flow does not increase with additional drilling, the hole will continue to the Sundance as the next objective.

Earl W. Reeder, Inc.'s No. 1 Union Pacific, C SW SW Section 19-20-83, Overland Dome, is drilling at 1,375 feet in hard shale and carrying the 12½-inch close behind the bit. In a core test a sand was found at 1,380 feet carrying water and a show of oil. Casing will be carried to a point below this sand.

The Mutual Oil Syndicate's No. 9 Dutton Creek, NW NE Section 12-18-78, Dutton Creek, is drilling at 942 feet. It is headed for the Muddy at 4,900 feet and probably will test horizons below that formation.

Park County

The Resolute Oil Co.'s No. 2 Northern Pacific, SE cor. NE Section 17-57-101, Badger Basin, is rigged and ready to spud. This is to be a rotary operation and contract went to the Sheldon-Burden

Corp., of Calgary. It is one-fourth of a mile southeast of No. 1, the deepest well in the Rocky Mountain area.

Sheridan County

R. D. Houghton and Walter Mumper are reported moving in materials for a test on the Allison ranch, 10 miles southwest of Sheridan. It is virgin territory and first possible producing sands are expected at and below 3,500 feet.

Fremont County

The Texas Co.'s No. 2 State-Ridgway, SE SW SW Section 36-34-95, Alkali Butte, is standing cemented at 4,660 feet.

Sublet County

A syndicate of Kemmerer men headed by Dr. C. D. Stafford have taken over the old Corder well in the SW cor. NE Section 9-29-113, north of the La Barge Field, and will resume operations at once. The well has been standing for several years at a depth of 2,710 feet. It was started by the Corder Oil Co. in 1928 and drilled to 2,315 feet. Lester Scoville and others then drilled it to its present depth.

The Cretaceous Oil Co.'s No. 1 Government, NW NE Section 12-28-114, Dry Piney, is reported to have resumed at 96 feet.

Sweetwater County

The Mountain Fuel Supply Co.'s No. 2 Union Pacific, SE cor. NW Section 21-16-104, South Baxter Basin, was completed in the Frontier at 2,359-63 feet for 9,500,000 feet of gas per day. Its No. 2 Cappers, SW cor. NW Section 12-19-104, North Baxter Basin, is drilling in after cementing the 8⅝-inch on top of the Dakota at 3,047 feet.

MONTANA

Glacier County

Four new locations, one completion, and one well showing for a small producer were reported in the Cut Bank Field. The locations are as follows: Montana Power Gas Co.'s No. 1 Wilbert, SW cor. Section 1-35-5w, in the gas area, rig up; R. C. Tarrant's No. 1 Carman, C NW NW Section 19-34-5w, an east offset to his No. 1 Miller, the only flowing well in the field; the Dakota-Montana Oil Co.'s No. 2 Haglund, Sr., E NE NE Section 14-34-6w, rig up; and the Santa Rita Oil & Gas Co.'s No. 1 Marie Krueger, C SW SW Section 14-37-5w, a north offset to its No. 1 Jacobson, the discovery well in the North Cut Bank area.

The completion was the Santa Rita Oil & Gas Co.'s No. 1 Olson, NE cor. Section 26-34-6w, which found the Darling sand at 2,865-2,905 feet and is estimated at 50 bbls. per day.

The small near-completion is R. C. Tarrant's No. 1 Hope, C SW SW Section 18-34-5w, which cut the Darling at 2,746-63 feet, but appears to be a small well. After two shots of 20 quarts each, the oil rose 80 feet. It will be shot again with 80 quarts. This is a diagonal offset to Tarrant's No. 1 Miller, which came in as a flowing well making 450 bbls. initial.

The Montana Headlight Oil Co.'s No. 1 Britton, NW SW NE Section 14-34-6w, is drilling at 140 feet. The Alberta-Pacific Consolidated Oil Co.'s No. 2 Matson, SE NE SW Section 14-34-6w, succeeded in freeing the 6⅝-inch and is rerunning same 50 feet off bottom at 2,883 feet. Same company's No. 2 Kiesel, SE cor. NW Section 11-34-6w, recovered the second string of tools and has landed the 10-inch at 1,685 feet. A. B. Cobb's No. 1 Walburger, SW cor. SE Section 35-34-6w, is shut down at 180 feet. Rig may be skidded to the center of the 40-acre tract as the operators are seeking a spacing agreement.

The Dakota-Montana Oil Co.'s No. 1 Matson, SE NE NW Section 14-34-6w, is drilling at 1,530 feet. W. M. Fulton and others' No. 1 Haggerty, NE cor. Section 16-34-6w, is shut down at 2,952 feet on top of the Darling, waiting for arrival of officials to drill in. Hannah-Porter Co.'s No. 1 Brittan, NW NE NE Section 23-34-6w, is waiting for tubing at 2,893 feet.

Montana Power Gas Co.'s No. 1 Vermont Loan & Trust, Sections 21 and 28-36-5w, is rigging, and its No. 1 Brown, C NE Section 31-35-5w, is drilling at 1,050 feet. Last named topped the Colorado at 315 feet and ran the 12½-inch to 452 feet.

Santa Rita Oil & Gas Co.'s No. 1 Jacobson, C NW NW Section 23-37-5w, North Cut Bank, is installing pumping equipment. It swabbed 65 bbls. in 18 hours after plugging back from 2,633 to 2,628 feet.

R. C. Tarrant's No. 3 Haglund, Jr., C SE NE Section 13-34-6w, is moving in, and his No. 2 Haglund, Jr., is drilling at 2,570 feet. Tarrant's No. 1 Williams, NW cor. NE Section 11-34-6w, landed the 10-inch at 1,810 feet.

The Texas Co.'s No. 1 Fisk, C NW NE Section 14-35-6w, is waiting for rotary parts. J. W. Johnson's No. 1 Ewing, C NE NE Section 3-34-6w, has rig up.

Petroleum County

The Oregon-Flatwillow Oil Co.'s No. 1, SE cor. Section 3-13-26, Flatwillow district, is drilling at 1,400 feet.

Gallatin County

Montana Gas & Petroleum Corp.'s No. 1 Adams, SE cor. Section 35-2n-1e, Three Forks district, is bottomed at 1,740 feet with the tools in the hole and rebuilding derrick blown down.

SOUTH DAKOTA

The Wy-Tex Oil Corp.'s No. 2 Hamilton, SE cor. NE Section 38-8n-1e, Oak View district, Butte County, which has been standing for several months at 1,528 feet, in the Minnelusa, with water in the hole, has straightened out title difficulties and is preparing to resume. A spudder used in drilling to the present depth was moved to the Osage Field some months ago and plans call for moving rig from the Carter well, to the north of this operation, over the hole and resuming. The Weaver Oil Co.'s No. 1, NW cor. Section 32-3s-22, Jackson County, is preparing to cement the 8¼-inch on bottom at 2,430 feet to shut off water. The pipe was landed at that depth recently when operations were resumed.

UTAH

An operation not heretofore reported is C. M. Schroth and others' No. 1, NW SE Section 2-42-11w, Rockville district, Washington County, drilling at 225 feet in red shale.

EPHRAIM LOCHER DEAD

BLUFFTON, Ohio, July 22.—Ephraim Locher, widely known oil man, died in his home near here July 12. He was born in Putnam County, Ohio, in 1871, and began working as a driller in oil fields of this State as a young man. In 1906 Mr. Locher was sent to Rumania by the Standard Oil Co. of New Jersey. Forced to leave that country by the German invasion, he returned to the United States and was employed by the Carter Oil Co. for two years in the vicinity of New Wilson, Okla. Going back to Rumania in 1919, he served as field superintendent in Moreni, the largest lease of the Romano-Americana Societe Anonyme pour l'Industrie, le Commerce et l'Exportation du Petrole. Mr. Locher returned to the United States in 1928 and he resided near here till his death. He had been ill two years.

YOUNG-JACK COUNTY PIPE LINE

WICHITA FALLS, Tex., July 24.—The Texas Pipe Line Co., according to announcement, will spend approximately $160,000 in laying its new 6-inch oil pipe line in the Young-Jack County Field. Construction will be started immediately. The new line, 15 miles long, will start from the pool 2 miles northwest of Bryson in Jack County, thence west to the new James Pool, 6 miles east of Newcastle in Young County, where it will take the production from this new area.

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Ever since 1917 . . . when the first Twin Disc Clutch solved a prominent tractor manufacturer's troubles . . . better design has always distinguished Twin Disc Clutches. ● Today drilling, draw works, spudding, pumping and all types of oil field production machinery . . . oil field power units . . . and pipe line excavating machinery are Twin Disc equipped. ● Twin Disc better design means utmost reliability at high or low speeds under the severest heavy-duty conditions. And Twin Disc patented adjustment provides for simultaneous take-up on all levers without using tools. ● Write Twin Disc Research Engineers for specific recommendations. Engineering Data Book on request. *Twin Disc Clutch Company, 1328 Racine St., Racine, Wis.*

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TWIN DISC CLUTCHES

Robert Wilson and Eric Schroeder Now Head the Kibele Manufacturing Co.

Robert A. Wilson of Dallas, Tex., widely known in Mid-Continent oil circles for the past 20 years, has acquired a substantial interest in the Kibele Manufacturing Co. of San Antonio, Tex., and has been elected president and general manager. Eric G. Schroeder, for four years general manager, has been elected vice president.

ROBERT A. WILSON
President

The new president of the Kibele company, educated in Canada, came to the United States in 1902. He served successively as an engineer for the Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa., the International Steam Pump Co., Buffalo, N. Y., and the Carnegie Steel Co., Youngstown, Ohio. He next became associated with the Texas Co. in Houston, Tex., as petroleum engineer and in this position formed friendships with oil men from all parts of the country.

The Lucey Manufacturing Corp. at Chattanooga, Tenn., offered Mr. Wilson the managership of its Houston plant and he served in this capacity until the organization of the Guiberson Corp., when he became director of manufacture for Guiberson. His work as a designer and developer of oil tools made him an outstanding figure. He has numerous oil tool patents and in the past several years has been active as a consultant engineer. His service in this capacity for the Kibele Manufacturing Co. gave him an intimate insight into the manufacture and development of Kibele slush pump pistons and well swabs.

Mr. Wilson is a director of the Penn Oil Co. of Dallas, Tex., and he is vice chairman of the division of rotary drilling equipment standards of the A.P.I.

Eric G. Schroeder, the new vice president, will serve also as secretary-treasurer and director of sales. Going to Texas directly following his graduation from the University of Missouri in 1920, Mr. Schroeder entered into newspaper work, acquired an interest in a newspaper in West Texas, became its managing editor, and later engaged in special newspaper work in other parts of the state.

ERIC G. SCHROEDER
Vice President

Upon the death in 1928 of Eugene Kibele, founder of the Kibele Manufacturing Co., Mr. Schroeder assumed charge of the business and he continued to conduct it.

The Kibele Manufacturing Co., known best in oil and equipment circles for its patented pistons for slush pumps and boiler feed pumps and for its improved casing and tubing swabs, had its beginning in 1923 in the Mission Machine & Supply Co. of San Antonio, Tex. Eugene Kibele, widely known as a designer and manufacturer of oil field equipment, went to San Antonio that year and began the production of a specialty piston for use in oil field pumps. Previous to that time Mr. Kibele had served as superintendent and general manager of large manufacturing plants, including Worthington Pump Co., Goulds Pumps, Clark Brothers and the Lucey Manufacturing Corp.

Wildcat Operations in Louisiana-Arkansas

(Continued from Page 106)

N. B. Porter's No. 1 J. W. Porter Est., 330 ft. N and E, SW cor. SE SE Sec. 23-12-13 ..... Began drlg. July 13; drlg. 250 ft.

SABINE PARISH

A. F. Allen's No. 1 G. W. Belton, NE cor. NW NW Sec. 33-9-13 ..... Began drlg. July 15; cmtd. 12½-in. 40 ft.

J. F. Morrissey's No. 1 Wyatt Lbr. Co., 150 ft. S and W, NE cor. NW NW Sec. 13-4-12 ..... Derrick.

CONVERSE DISTRICT

R. L. Gay's No. 1-B Bowman-Hicks, 330 ft. N and E, SW cor. SW NE Section 22-9-13 ..... Began drlg. July 14; cmtd. 12-in. 38 ft; drlg. 780 ft.

Lambert et al's No. 1 Edwards, 300 ft. S and E, NW cor. SW NW Sec. 29-9-13 ..... D.S.test 3,045-3,328 ft; S.W. and muc; W.O.

Joe Modisette's No. 3 Frost Lbr. Industries, 330 ft. S and E, NW cor. NE SW Sec. 16-9-13 ..... S.D.; W.O. 3,190 ft.

E. M. Self's No. 1 G. I. Paul, 330 ft. N and W, SE cor. NE SW Sec. 9-9-13 ..... Began drlg. July 13; cmtd. 10-in. 60 ft.; S.D.

Homer Tyson's No. 1 G. W. Hough, 330 ft. S and E, NW cor. SW NW Sec. 31-9-12 ..... Derrick.

Arkansas

COLUMBIA COUNTY

C. W. Alworth et al's No. 1 W. D. King, SW cor. SE SW Sec. 16-17-20 ..... Drlg. hard shale 1,600 ft.

JEFFERSON COUNTY

J. E. Elliott's No. 1 B. V. Nevin, 440 ft. N and E, SW cor. SW NW Sec. 26-4-10 ..... Derrick.

Super-NECO

Non-Corrosive Ball and Seat

Best and Latest Development in Ball and Seat Line.

Resists cutting action of Sand—Immune to Acid and Bad Water.

New Non-Breakable Ball.

The best Ball and Seat for any condition.

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East of Mississippi: All Dealers
West:
Dunigan Tool & Supply Co.
Pelican Well Tool & Supply Co.
Republic Supply Co.

R. V. Harrell et al's No. 1 McGoughey, NW cor. Sec. 22-7-10 ..... S.D. 1,550 ft.

HEMPSTEAD COUNTY

Kentucky O. & G. Co.'s No. 1 Leslie, NW cor. SW NW Sec. 21-9-26 ..... Derrick.

LAFAYETTE COUNTY

Paul G. Benedum's No. 1 Hanson, 175 ft. S, 50 ft. W, C, NW Sec. 25-19-24 ..... Rig up.

Geo. W. Harper's No. 1 Reed-Bodcaw, NW cor. Sec. 16-15-22 ..... Set 10-in. 40 ft.

MILLER COUNTY

Duluth-Ark. Oil Co.'s No. 2 Beck, 330 ft. S and E, NW cor. SE SW Sec. 34-15-26 ..... Derrick.

J. T. Humphrey's No. 1 Grace, C SW SW Sec. 9-15-27... Cmtd. 10-in. 206 ft.

Tarkington et al's No. 1 Gibson, 1,980 ft. N, 660 ft. E, SW cor. Sec. 30-18-27 ..... Began drlg. July 15; cmtd. 12½-in. 40 ft.

UNION COUNTY

E. R. Henderson's No. 1 Snyder, 400 ft. N, 660 ft. E, SW cor. NE SE Sec. 2-19-15 ..... Drlg. sandy shale 1,900 ft.

NEVADA COUNTY

Longoria et al's No. 1 Dick Gulley heirs, Sec. 2-12-20.... Began drlg. July 5 and S.D.

Mississippi

JONES COUNTY

Snow-Black Pet. Co.'s No. 1 Watson, 600 ft. W, 210 ft. S, center, Sec. 24-7-13 ..... Drlg. sandy shale 1,850 ft.

LAMAR COUNTY

Lamar Oil Co.'s No. 1 Scott, NE NE Sec. 18-2n-14..... Drlg. marl 1,480 ft.

WALTHALL COUNTY

Mutual O. & G. Co.'s No. 1 Boyd, Sec. 24-2n-9e, SW cor. SW SE ..... Derrick pattern.

WARREN COUNTY

Kistler & Stivers' No. 1 Blake est., 1,315 ft. NE Blakely Station, Sec. 15-17-5 ..... Cmtd. 12½-in. 316 ft; drlg. 2,620 ft.

Louisiana-Arkansas Proven Areas

North Louisiana

CADDO—BETHANY

Company, well, farm name, section and block— Remarks:

Tom Collins Pet. Co.'s No. 1 Gill & Lipscomb, 660 ft. N, 1,506 ft. E, SW cor. Sec. 17-16-16 ..... Derrick.

CADDO PARISH—BLANCHARD

Nick Barbare's No. 2 P. A. Sharpe, 330 ft. S and W, NE cor. NE SE Sec. 9-18-16 ..... Drlg. 250 ft.

Calatex O. & G. Co.'s No. 1 G. M. Agurs, Sec. 9-16-16.... Derrick.

Louana O. & G. Co.'s No. 2 Sharp, Sec. 10-18-16, 660 ft. S and W, NE cor. NW ..... Coring 2,743 ft.

CADDO—RODESSA

Ark. La. P. L. Co.'s No. 1 Williams & Windham, Sec. 4-22-16, 560 ft. S, 660 ft. E, NW cor. NE NW .... Drlg. shale and lime 3,940 ft.

United Gas Public Service Co.'s No. 1 Festeruan, Sec. 23-23-16, 1,980 ft. N, 1,320 ft. E, SW cor. ..... Drlg. lime 3,420 ft.

DE SOTO PARISH

Tom McKinney et al's No. 1 J. M. Nabors, 330 ft. N and E, SW cor. SE SE Sec. 26-12-12 ..... Rig up.

MOREHOUSE PARISH

United Gas Public Service Co.'s No. 29 Crossett Lbr. Co., 661 ft. E, 660 ft. N, SW cor. SW SW Sec. 17-22-5 ..... Derrick.

United Gas Public Service Co.'s No. 30 Crossett, Sec. 25-22-4e ..... Cmtd. 9-in. 849 ft; drlg. 1,270 ft.

United Gas Public Service Co.'s No. 2 Patton, 3,375 ft. S, 2,917 ft. E, NW cor. Sec. 12-20-11 ..... Cmtd. 6⅝-in. 2,162 ft; bailing to test.

RED RIVER PARISH

E. M. Thompson's No. 1 T. J. Crichton, SW SE Sec. 17-13-10 ..... Tested S.W.; S.O. 940 ft.; S.D.

SABINE PARISH—ZWOLLE

J. C. Chandler's No. 1 Rains, SW cor. NW Sec. 14-7-11.. Rigging up.

Dyer et al's No. 1 McCollister, 330 ft. S and E, NW cor. SW NE Sec. 24-7-12 ..... Derrick.

T. E. Kelly's No. 1 McClanahan, 1,000 ft. S, 330 ft. E, NW cor. SW NW Sec. 36-8-11 ..... Derrick pattern.

H. C. Mauiding's No. 1 DeLatin, Sec. 3-7-11..... S.D. 2,215 ft.

Ben Merritt et al's No. 1 L. A. Cook, 336 ft. N, 333 ft. W, SE cor. Sec. 34-8-11 ..... W.O.S.R.; 1,000 ft. oil in hole; T. D. 2,560 ft.

C. H. Tuttle's No. 4 Byrd, 800 ft. S, 920 ft. E, NW cor. NW NW Sec. 7-7-10 ..... Derrick.

A. L. and E. J. Waller, tr.'s No. 1 J. A. Greer, 108 ft. N, 560 ft. W, SE cor. SW NE Sec. 24-8-12 ..... Rig up.

C. T. Ruffin's No. 4 Lilley, 330 ft. S and E, NW cor. NW NW Sec. 8-7-11 ..... Rig up.

Mississippi

HINDS COUNTY

Meredith Trading Co., Inc.'s No. 1 Crane-Lawrence, Sec. 23-6n-1e, 1,178 ft. S, 318 ft. W, NE cor. NW SW ..... Began drlg. June 23; 10-in. 752 ft; drlg. 1,650 ft.

RANKIN COUNTY

J. A. Alexander, tr.'s No. 1 Love Pet. Co., 600 ft. W, 240 ft. S, NE cor. NW NE Sec. 1-5-1e ..... Rig up.

Muse & Muse's No. 1 Carlton, Sec. 13-5n-1e, 650 ft. E, 725 ft. N, SW cor. ..... Cmtd. 10-in. 752 ft.; drlg.

Wildcat Operations in Southwest Texas

(Continued from Page 108)

Tipton's No. 1 Gembler, 514 ft. from W line, 616 ft. from N line of 120-ac. tract in M. Gotari Sur .. Spudded in.

BLANCO COUNTY

Blanco Development Co.'s (McGee) No. 1 A. J. Dittmar, 1,320 ft. from S line, 150 ft. from W line of George Evans Sur. No. 58, 4 miles NW of Johnson City ..... T.D. 615 ft; drlg. shale.

Isham et al's No. 1 Lester ranch, 200 varas from N and E lines of Antonio Bandrand Sur., 8 miles NE from Johnson City ..... T.D. 100 ft; standing.

CALDWELL COUNTY

Cargill et al's No. 1 Brown, 1,600 ft. from E line, 330 ft. from S line of C. E. Brown 112-ac. tract, Dillard Cooper Sur. ..... T.D. 2,035 ft; standing.

E. L. Hope and Joe Cole's No. 1 Mike August, 150 ft. from NE line, 165 ft. from NW line of tract ..... T.D. 1,875 ft; putting in second boiler.

F. L. Thomson's No. 1 W. M. Mercer, 1,062 varas from SE, 1,175 varas from SW line of Jas. Berry Sur. .... Fishing for slip.

DE WITT COUNTY

L. G. Wade's No. 1 fee, 6 mi. S from Yoakum, 520 ft. from NW line, 160 ft. from SW line of 35-ac. tract in Lavina Dunbar Sur. ..... T.D. 2,402 ft; S.D.

DUVAL COUNTY

Clark & Miller's No. 1 R. Lopez, 150 ft. from N line, 330 ft. from W line of Sur. 141, S. C. I. Co., 8 miles SW from San Diego ..... T.D. 1,890 ft; S.D.

M. J. Coffey's No. 1 Farr, 591 ft. from W line, 270 ft. from N of NW cor. of Sec. 2, located in Sur. 27 ..... T.D. 1,710 ft; D.S. stuck.

T. J. Conway and C. A. Campbell's No. 1 W. K. Hoffman, 330 ft. from NW line, 1,650 ft. from NE line of Sur. No. 114 ..... Drlg. below surface csg.

Pumping Equipment

Requires Careful Installation

FOR that final step, the installation, care and experience is necessary.

Whether you use central powers or beams at the well, you will find the daily experience of Dewey T. Ross most helpful and valuable in getting the most efficiency out of your pumping equipment.

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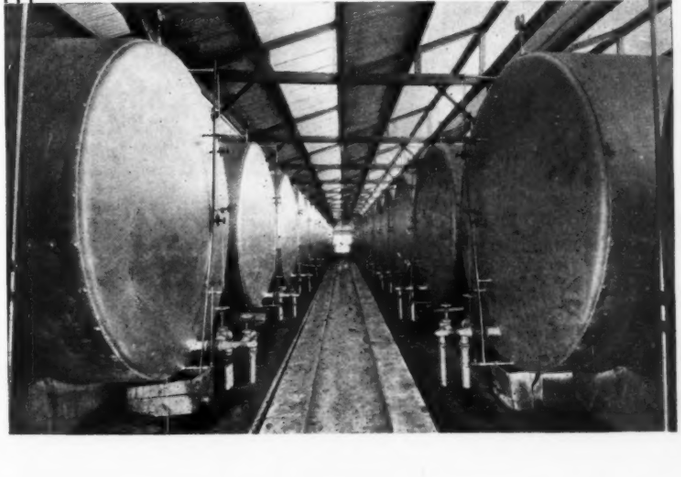

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BAKER CEMENT WHIRLER SHOE

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▲ ▲ ▲ a strong, safe Guide Shoe which successfully leads the casing string downward without danger of hanging up.

The Guide is made of strong "Baker Formula" Concrete, securely anchored in a casing shoe of the correct design.

DeSoto Oil Co.'s No. 2 Wood-Welder, 660 ft. E of No. 1 (950 ft. from N line, 2,640 ft. from W line of Sur. No. 211 ..... Spudded in.

Huff et al's No. 1 A. Roach 685 ft. from E line, 43 ft. from S line of Blk. 7, Sur. No. 457 ..... Spudded and S.D.

G. G. Mortimer's No. 1 Peal, 330 ft. from S and W lines of Sur. No. 792 ..... T.D. 2,411 ft; fishing.

William B. Stewart's No. 3 Duval County Ranch Co., 300 ft. from E line, 330 ft. from W line of S half of SE, Sur. 363 ..... T.D. 2,083 ft; drlg.; on deal with Reynosa.

FRIO COUNTY

J. E. Greenlee's No. 2 Burns, 150 ft. from W line, 1,800 ft. from S line of SE of 160-ac. tract, Castro Sur. No. 123 ..... T.D. 2,300 ft; drlg.

GILLESPIE COUNTY

Powers et al's (Nixon-Dore) No. 1 Andrew Lindig, 18 mi. E of Fredericksburg ..... T.D. 730 ft; drlg. limey shale.

GOLIAD COUNTY

Gillette Oil Co.'s No. 1 Lackey & Weldon, 1,730 ft. from NE line, 2,700 ft. from SE line of 1,000-ac. tract, Navarro Gomez Sur. ..... Drlg. wtr. well.

GUADALUPE COUNTY

Clint Lanier's No. 1 L. D. Hill, 450 ft. from NW line, 1,450 ft. from NE line of George Allen Sur. ..... Rig on ground.

J. A. Harper's No. 1 Rosenbrook, 911 ft. from NE line, 150 ft. from NW line of tract in Vincente Duran Sur. No. 4 ..... T.D. 756 ft; setting csg.

W. J. Walton's No. 1 M. Hoffman, 750 ft. from E line, 150 ft. from S line of tract in Green Dewitt Sur. .... T.D. 1,240 ft; drlg.

HIDALGO COUNTY

Carl & Johnston's No. 1 Doughty, 187 ft. from S and E lines of Lot 11, Blk. 5 of Subd. of Indios Ranch Sur in N. Hidalgo ..... T.D. 2,945 ft; coring.

Maxwell & Young's No. 1 King, 175 ft. from N and E lines of Lot 3, Blk. 16, Alamo tract ..... T.D. 125 ft; standing in quicksand waiting for csg.

JIM HOGG COUNTY

Cole Pet. Co.'s No. 1 Vela and Pena Bros., 330 ft. from W line and on line between Blks. 80 and 81, White Subd. of Share 2, Sur. 548, of El Peyote grant ..... Rigged up.

D. C. DeWitt's No. 1 A. G. Lopez, 3,475 ft. from W line, 425 ft. from N line of Sur. No. 106 ..... T.D. 1,650 ft; standing.

R. F. Foree's No. 1 Holbien, 150 ft. from N and W lines of Blk. 54, Sec. 9 of Holbien Sur. of Share 3 of Las Animas grant ..... T.D. 3,120 ft; standing.

Seaton A. Barnes, Jr.'s No. 1 R. Holbien, 220 ft. from W line, 340 ft. from S line, of Blk. 54, share 3, Los Animas tract ..... T.D. 2,323 ft; coring.

Shankle et al's No. 1 Thompson, Blk. 19, Share 2, Las Animas grant ..... T.D. 2,100 ft; drlg.

KARNES COUNTY

Accumulative Royalty Co.'s No. 1 Rudd, 6 mi. S from Karnes City ..... T.D. 640 ft; drlg.

Karnes Co. Dev. Co.'s No. 1 S. Saige, 150 ft. E of C of W line of Wm. Pate Sur. ..... T.D. 900 ft.; drlg.

John S. Pickett's No. 1 Saige, 150 ft. from W line, 750 ft. from N line of John Pate Sur., 2 mi. N from Karnes City ..... T.D. 100 ft; drlg.

KENDALL COUNTY

E. W. Martin's No. 1 Houston, in F. Wright Sur. .... T.D. 727 ft; drlg limey shale.

KERR COUNTY

J. E. Anderson's No. 1 J. D. Witt, 1,320 ft. from N line, 1,320 ft. from W line of Sec. 1,923, in Hamilton Sur., 4 miles S of Center Point .. .. T.D. 1,520 ft; drlg.

W. E. Clark's No. 1 Love, 660 ft. from N and W lines of Mrs. Cassandra Winn Sur. No. 1,759 ..... Rigging up.

Evans & Gant's No. 1 Love, 660 ft. S of S line of Sur. 1,597, 1,320 ft. from W line of Sur. 1,594 ..... T.D. 4,060 ft; R.U. to pull csg. to test at 3,391 ft; if it fails will be carried to Ordovician.

LA SALLE COUNTY

C. B. Bunte's No. 1 Mrs. T. A. Coleman, CNL NE Sec. 68, Poitevant Sur. ..... T.D. 2,175 ft; drlg.

W. H. Wallace's No. 1 H. C. Yeager, 150 ft. from S and E lines of Sur. No. 95 ..... T.D. 1,260 ft; drlg.

LEE COUNTY

LIVE OAK COUNTY

Coquat, O'Neill & Phillips' No. 3 Sanger, 2,930 ft. from SW line, 330 ft. from SE line of Sur. No. 350..... Spudded in and set surface csg.

Loma Oil Co.'s No. 1 A. J. Turner, 4,000 ft. from SW and 160 ft. from SE line of 660-ac. tract in Hays Sur. 2 mi. NE from Griffith well ..... T.D. 100 ft; drlg.

R. P. Whitfield's No. 1 Terrell, SW cor. of 2,500-ac. tract in David O'Boyle Sur., 5 mi. NW from Three Rivers ..... T.D. 640 ft; waiting on orders.

McMULLEN COUNTY

Boysen & Hotchkin's No. 1 Hagist, 1,650 ft. from W line, 990 ft. from N line of 160-ac. tract in G. B. Kinney Sur. No. 8 ..... T.D. 2,662 ft; abd.

Darby Oil Co.'s No. 1 Sling, 150 ft. from S and E lines of NE of B.S.&F. Sur. No. 111 ..... T.D. 1,902 ft; standing for wtr.

John V. Edwards' No. 1 J. T. Brown, 150 ft. from river, 150 ft. from NW cor. of Brown tract, E from Calliham ..... Drlg. 300 ft.

C. R. Pope, Inc.'s No. 1 A. C. Miles, 300 ft. to E line, 2,375 ft. to S line, Sur. 149 ..... T.D. 2,165 ft; no report.

Shumway et al's No. 1 Wulf, Sur. 4 miles SE from No. 2 Shiner, 1,730 ft. from S line, 167 ft. from W line of Steinhardt Sur. No. 190 ..... T.D. 1,910 ft; S.D.; about to resume.

S. R. & C. Oil Corp.'s No. 1 Reeves, 1,650 ft. from S line, 330 ft. from E line of Francis Smith, No. 4 Sur. ..... Derrick.

MILAM COUNTY

Ed Clark et al's No. 1 Thomas Graves, 250 ft. from SW and NW lines of Jackson Hall Sur. ..... T.D. 802 ft; standing.

Clark et al's No. 1 Hoppe, 450 ft. from NE line and 450 ft. from SE line of E. Hoppe 60-ac. tract in Juan Jose Acosta Sur. ..... T.D. 520 ft.; standing.

SAN PATRICIO COUNTY

George W. Scruggs' No. 1 Collins, 1,040 ft. from NE line, 700 ft. from SE line of Blk. 36, E. J. McGloin Sur. ..... T.D. 2,756 ft; changing to heavier rig.

STARR COUNTY

J.&B. Oil Co.'s No. 1 Crown Brick & Tile Co., 1,800 ft. S of State Highway No. 4 and 580 ft. from W line of Porcion 97 near La Puerta ..... T.D. 4,560 ft; milling out tools lost in hole.

W. P. Chancellor's No. 1 A Guerra, 26,000 ft. from S line, 2,600 ft. from E line of Share No. 6 of San Jose Grant Sur., NE cor. of county ..... T.D. 1,837 ft; standardized at 1,777-1,837 feet; S.G. at bottom of sand; drlg. ahead.

F. R. Cooper's No. 1 J. M. Martinez, 150 ft. to S and E lines of A.B.&M. Sur. No. 135 ..... T.D. 2,680 ft; drlg.

Great Plains Oil Co.'s No. 1 Sanchez, 660 ft. from W line, 330 ft. from S line of SE NW of Sur. No. 344 ... T.D. 2,300 ft.; standing.

Jeffries and Lambeth Drlg. Co.'s No. 1 Starr County Cattle Co., 11,572 ft. from N line, 2,490 ft. from E line of Porcion 89, Sur. jurisdiction Camargo, 8 miles NE from Rio Grande City ..... T.D. 2,455 ft; D.S. test showed big volume of gas in 3 min.; set csg.; show of oil in mud; 5 ft. in sand.

E. H. Stickney's No. 1 H. Gonzales, 300 ft. from E line, 3,166 ft. from S line of H.E.&W.T. Sur. 339.... T.D. 1,130 ft; drlg.

Sun Oil Co.'s No. 1-B Guerra, 9,677 ft. from SE line, 3,300 ft. from SW line of Share H-14-B Sur., La Cuevitas grant ..... T.D. 2,476 ft; tested 14 fourbles S.W.

THEN YOU GET ▲▲

▲ ▲ ▲ complete safety for floating and landing any string of casing ▲ ▲ ▲ ▲ ▲ ▲ safety based on strength beyond the collapsing strength of your casing ▲ ▲ ▲

▲ ▲ ▲ safety based on the high efficiency of the Baker Bakelite Valve with the buoyant bakelite ball which provides a leak-proof seal at the slightest reversal of pressure ▲ ▲ ▲ safety based on the double sealing of this bakelite ball against a rubber ring recessed in the strong bakelite valve assembly set in Baker Formula Concrete ▲ ▲ ▲

NEXT YOU GET ▲▲

▲ ▲ ▲ the finest insurance for a successful cement job.

When cementing operations are commenced, the cement flows fast through large circulation passages and into the side ports, where the Baffle Plates give it that whirling motion which does not jet into the formation but does secure even distribution of the cement around the shoe and casing. After the cement is in place, the Baker Double-Seal Back Pressure Valve holds against any pressure until the cement is set. When a "washdown" effect is desirable, or necessary, do not specify the Baker Cement Whirler Shoe—use a Baker Cement Float Shoe or a Baker Cement Float Collar with a Baker Cement Guide Shoe—each the best of its kind.

Sun Oil Co.'s No. 1-C Guerra, 4,861 ft. from NW line, 660 ft. from NE line of Sur. La Sacatosa grant ....T.D. 2,149 ft; drlg. in 10 min.; coring ahead.

Goodwain & Yantis' No. 1 Seabury, 150 ft. from S and W lines of Sec. 107, Share No. 1, Porcion No. 107....T.D. 1,910 ft; drlg.; to go 3,000 ft.

TRAVIS COUNTY

Franklin et al's No. 1-A Reimers, 1,200 ft. from SE line, 1,600 ft. from most southerly SW line of Sur. No. 35 .....T.D. 420 ft; csg. stuck.

Holdin's No. 1 D. V. Collins, 6,192 varas from SE line, 10,440 varas from SW line of Santiago de Valle Grant Sur. .....T.D. 810 ft; standing.

UVALDE COUNTY

Frank A. Brown's No. 1 J. A. Milliken, 1,800 varas from W line which is Sabinal River, and 108 varas from S line of Antonio Cruz Sur. No. 383 .....T.D. 100 ft; T.A.

Evans & Thompson's No. 1 Farris, 400 ft. from S and W lines of 535-ac. tract near center of John J. Hammond Sur. ..... T.D. 300 ft; renewing leases to correct title.

O. A. Payte's No. 1 Riddle, 180 ft. from N line, 1,050 ft. from E line of 150-ac. tract, Blk. 471, Kilgore Sur. .....T.D. 800 ft; S.D.

John Roberts' No. 1 Kincaid, 4 mi. N of Sabinal .....T.D. 705 ft; drlg.

WEBB COUNTY

Danvers & Harrison's No. 1 Benavides, 2,490 ft. from E line, 2,497 ft. from S line of Sur. No. 669 .....Spudded in.

Danvers & Harrison's No. 1 Benavides, 2,490 ft. from S and E lines of Sur. No. 669 .....Spudded in.

Edwin M. Jones' No. 2 Callaghan, 330 ft. from S and E lines of C.C.S.D.&R.G.N.G. R.R. Sur. No. 1,211....Rigging up.

Grey Oil Corp.'s No. 1 A. S. Billings, 2,310 ft. from N line, 330 ft. from W line of Blk. 1, C.C.S.D.&R.G. N.G. Sur. No. 13 .....T.D. 400 ft; drlg.

P. G. Rouse's No. 1 S. M. Withers, 3,000 ft. from E line, 400 ft. from N line of Sur. No. 28 .....T.D. 1,378 ft; drlg.

Shankle & Roche's No. 1 W. W. Stell, 660 ft. from N and W lines of NW NW of No. 37 Sur., 11 miles N from Mirando City .. .. T.D. 2,500 ft; resumed drlg.

Will Ohlhausen's No. 1 Moses Jones, 273 varas from E line, 516 varas from S line of 100-ac. tract in Sur. No. 1,640 .....T.D. 850 ft.; standing.

Washabaugh & Roberts' No. 1 Bruni, 1,170 ft. from NE line, 150 ft. from NW line of E¼ of 160-ac. tract in Sur. 139 .....T.D. 43 ft; set surface csg.; drlg. wtr. well.

WILLIAMSON COUNTY

R. S. Wilson's No. 1 Ritchey, 1,200 ft. from SE line, 200 ft. from NE line of F. B. Ritchey 98-ac. tract in Simon Miller Sur. .....T.D. 1,880 ft; drlg. shale.

WILSON COUNTY

Humble Oil & Refining Co.'s No. 1 Hardy, 607 ft. from S line, 466 ft. from E line of Hardy 65-ac. tract in Joseph Reynolds Sur. .....T.D. 5,214 ft; drlg. ahead in Edwards; showing sulphur wtr.

ZAPATA COUNTY

J. C. Charver's No. 1 Bustamente, 330 ft. from N and E lines of 24-ac. tract in Share 24 of Las Comitas grant .....T.D. 20 ft; drlg.

Humble, Brower & Crow's No. 1 Slator, 2,111 ft. from SW line, 1,980 ft. from SE line of Blk. 1, Subd. of Slator ranch in J. V. Borrego grant .... T.D. 1,069 ft; standing.

Circle W. Oil Co.'s No. 1 M. Garza est., 623 ft. from NW line and 699 ft. from SW line of Blk. 30, C. A. Douglas Subd. of Charco de la India grant .....Rigged up; standing.

O. W. Killam's No. 1 A. M. Bruni est., 670 ft. from NE line, 150 ft. from NW line of Blk. 4, Sur. No. 15 ....Spudded in.

Sarah Poppas' No. 1 Juan V. Cueller, Jr., 150 ft. from NE and SE lines of Blk. 3, Sur. 2 of Poppas Subd. of Por. 34 .....T.D. 800 ft; drlg.

A. C. Savey et al's No. 1 Flores, 150 ft. from NW line, 206 ft. from NE line of Blk. 3, Share 1 of P. A. Richer Subd. of Porcion No. 36 .. .. T.D. 2,404 ft; standing.

Stevens & Brown's No. 1 Alexandro Garcia, 660 ft. from SW line, 660 ft. from NW line of Blk. 6, Stevens & Brown Subd. of W 700 acres, Charco Redondo grant, A. Garcia tr. 16 miles SE of Zapata .....T.D. 1,250 ft; standing.

ZAVALA COUNTY

Zavala O. & G. Co.'s No. 1 Gates, 1,320 ft. from N line, 1,320 ft. from E line of Hooper & Wade Sur. No. 13 T.D. 6,054 ft; hole cleared; standing.

Southwest Texas Proven Areas

Week Ending July 22

CEDAR CREEK—BASTROP COUNTY

Company, well, farm name, section and block—	Remarks
Marts & Beavens' No. 1 Orgain, 1,500 ft. from SW line, 200 ft. from NW line of tract in Addison Litton League	Spudded in.

HILBIG POOL—BASTROP COUNTY

Humble O. & R. Co.'s No. 6 Wilhelm	T.D. 2,572 ft; abd.

RIDDLE POOL—BASTROP COUNTY

Floyd Dodson's (and Muckelroy) No. 1 Duran, 45-ac., 300 ft. from NE line, 1,440 ft. from SE line of 100-ac. tract, Flynt Sur.	T.D. 2,355 ft; coring.
Marts & Beavens' No. 1-A Riddle (202-ac.)	T.D. 2,310 ft; running csg.
Ogden & Reed's No. 1 Talley, 150 ft. from NW line, 1,350 ft. from SW line of John Maxmillan Sur.	T.D. 2,127 ft; treated with 3 drums acid; standing.
Ogden & Reed's No. 1-A C. L. Riddle, 1,225 varas from NE line, 288 varas from NW line of Maxmillian Sur.	T.D. 2,276 ft; treated with 6 drums acid; standing.

PETTUS POOL—BEE COUNTY

Mauldin's No. 4 fee, 420 ft. NE of No. 3, ½ mile S from Pettus townsite	Spudded in and set surface csg.

TULETA POOL—BEE COUNTY

Grisham et al's No. 1 Rapp & Hatch, 1,700 ft. from N line, 2,640 ft. from E line, Sec. 12 of Ragsley's Subd. of Uranga grant	T.D. 4,393 ft; in sand; set csg.

ECKERT POOL—BEXAR COUNTY

J. F. Harrison's No. 1 F. Gembler, 150 ft. from NW line, 460 ft. from NE line of 88-ac. tract in J. Montez Sur.	T.D. 416 ft; standing in shale.
McDaniel & Wood's No. 1 A. C. Gembler, 150 ft. from N and W lines of 40-ac. tract, Gotari Sur.	Moving in.

EAST COLE POOL—DUVAL COUNTY

Cole & Wise's No. 1 S. Benavides, 150 ft. from SW and NW lines of Blk. 415, Myrtle E. Hale Subd. of Mariana Arispe grant	T.D. 2,960 ft; coring sandy shale.

NORTH GOVERNMENT WELLS POOL—DUVAL COUNTY

Central Producers, Inc.'s No. 7 Tuck & Johnson, 330 ft. from S and W lines of SE SW of Sur. No. 42	Rigging up.
Hester Bros.' No. 1 fee, 330 ft. from S and E lines of NE of Sur. No. 47	Rigging up.
Humble O. & R. Co.'s No. 7 Hahl, 2,110 ft. from S line, 330 ft. from W line of E½ of Sur. No. 360	T.D. 2,294 ft; waiting on cmt.
Magnolia Pet. Co.'s No. 1 Hahl-Southland, 1,210 ft. from N line, 150 ft. from W line of No. 61 Sur.	T.D. 2,277 ft; coring.
Navarro Oil Co.'s No. 15 Hahl, 2,970 ft. from S line, 330 ft. from E line of W½ of Sur. No. 360	T.D. 2,286 ft; comp. 4 bbls. hrly.
Navarro Oil Co.'s No. 20 Hahl, 1,650 ft. from S line, 990 ft. from E line of W½ of Sur. No. 360	T.D. 2,288 ft; swabbing.
C. G. Porter's No. 2 Smith, 330 ft. from S and W lines of NW NE No. 46 Sur.	T.D. 1,100 ft; drlg.

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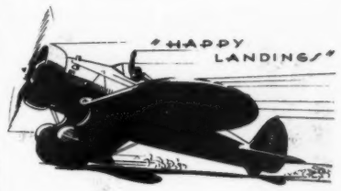

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Reynosa Oil Corp.'s No. 1 Duval County Ranch Co., 330 ft. from N and W lines of N½ of SW of Sur. No. 362 ..... T.D. 2,269 ft; to drill in Sunday.

Reynosa Oil Corp.'s No. 7 Hahl, 330 ft. from N and E lines of N½ of NE Sur. No. 42 ..... T.D. 2,295 ft; set csg.; W.O.C.

Southwest Drlg. Co.'s No. 11 Wendt, 990 ft. from N and E lines of SW SE Sur. No. 43 ..... T.D. 2,254 ft; set csg.; W.O.C.

Texas Co.'s No. 8 Johnson, 330 ft. from N line, 990 ft. from W line of S½ of NW¼ of Sur. Seago. No. 42 ..... T.D. 1,000 ft; drlg.

SARNOSA POOL—DUVAL COUNTY

L. W. Capps' No. 5-A Duval Ranch Co., 806 ft. from SW line, 330 ft. from SE line of W¼ of Sur. 574 .... Rigging up.

Sarnosa Oil Corp.'s No. 10 Well, 1,546 ft. from NW line, 990 ft. from NE line of Sur. No. 130 ..... T.D. 750 ft; drlg.

Sarnosa Oil Co.'s No. 9 A. Well, 2,154 ft. from NW line, 330 ft. from NE line of No. 130 Sur. ..... Location T.A.

Sun Oil Co.'s No. 5 Cano, 1,141 ft. from NE line, 330 ft. from SE line of E¼ of No. 576 ..... Rigging up.

Sun Oil Co.'s No. 4 Cano (Cuellar), 741 ft. from NE line, 330 ft. from SE line of E, Sur. No. 576 ..... T.D. 2,421 ft; comp. 10 bbls. hrly. on ¾-in. choke.

PETERS POOL—DUVAL COUNTY

R. F. Duggan's No. 1 Sutherland, 1,807 ft. from E line, 4,186 ft. from S line of Sur. No. 187 ..... T.D. 2,581 ft; sand 2,577-81 ft.; tested 15 joints oil and mud, and 3 joints oil in 10 min. waiting for orders.

SANDIA POOL—JIM WELLS COUNTY

Crude Oil Royalty Co.'s No. 1 Allen, 150 ft. from N and E lines of Blk. 2, Subd. of Wade ranch ..... T.D. 2,648 ft; standing.

NORTH PETTUS POOL—KARNES COUNTY

Gulf Coast Co.'s No. 6 McKinney ..... Begol Oil Co. building derrick and moving in rig.

JACOBS POOL—McMULLEN COUNTY

Loma Oil Co.'s No. 13-A Jacob, 1,320 ft. N, 15 deg. E from No. 12-A ..... T.D. 944 ft; comp. 10 bbls. daily.

Longhorn Oil Co.'s No. 2-A C. T. Lark, in E. W. B. Scrugham Sur. ..... T.D. 1,021 ft; recemented csg.

Longhorn Oil Co.'s No. 3-A Lark, 660 ft. S of No. 1-A Lark ..... T.D. 1,033 ft; slopping oil over top of csg.

KING POOL—NUECES COUNTY

John F. Camp's No. 1 King, 150 ft. from N and W lines of E½ of Sec. 29, of Richard King Subd. ..... T.D. 5,047 ft; drlg. hard lime.

MATHIS POOL—SAN PATRICIO COUNTY

Geo. W. Scruggs' No. 1 Collins ..... T.D. 2,756 ft.; changed to heavier rig.

LAUREL POOL—WEBB COUNTY

Cole & Wise's No. 4 Garcia-Villareal ..... T.D. 2,365 ft; sand at 2,331-35 ft; tested 25 thribbles S.W. in 18 min.

Shankle & Newton's No. 1 S. Benavides, 330 ft. from S and E lines of Blk. 13, in No. 2,272 Sur. ..... T.D. 40 ft; set surface csg.; W.O.C.

South Tex. Oil Co.'s No. 9 Laurel, 334 ft. from N line, 1,121 ft. from W line of Blk. 13 ..... T.D. 2,260 ft; drlg.

Arthur H. Wray's No. 1 Laurel, 600 ft. from W line, 150 ft. from S line of Blk. 5, Sur. 270 ..... T.D. 1,100 ft; drlg.

MOCA POOL—WEBB COUNTY

Moca Oil Co.'s No. 4 Duval County Ranch Co., 810 ft. from N line, 130 ft. from W line of Blk. 22, Share 3, Zapata County School Land ..... T.D. 1,214 ft.; P.B. to 891 ft.

S.R.C. et al's No. 2 Duval Co. Ranch Co., 330 ft. W of No. 1, 150 ft. from S line of lease, League No. 3 of Zapata County School Land Sur. ..... T.D. 866 ft; going on pump.

S. R. C. Oil Corp.'s No. 3 Duval County Ranch Co., 1,943 ft. from E line, 150 ft. from S line of Blk. 11, League 3, of Zapata County School Land Sur. .. Rigging up.

CHAPMAN POOL—WILLIAMSON COUNTY

Deep Pay Exploration Co.'s No. 1 M. V. Lawrence, 237 ft. from W line, 86 ft. from S line of S. Miller Sur. ..... T.D. 3,056 ft; in Edwards; standing.

ESCOBAS POOL—ZAPATA COUNTY

Texas Co.'s No. 31 Measles, 1,576 ft. from SE line, 18,556 ft. from SW line of Cerrito Blanco Grant Sur. . T.D. 1,199 ft; comp. 50 bbls.

MIRANDO VALLEY POOL—ZAPATA COUNTY

J. W. Edwards' No. 1 R. Hinnant, 150 ft. from SE lines of Blk. 8, Sur. No. 116 ..... T.D. 1,800 ft; S.D. for wtr.

Gulf Coast Fields and Wildcats

(Continued from Page 107)

Humble O. & R. Co. and Gulf Prod. Co.'s No. 16 R. P. Lockwood, J. Rabb Sur., 1,450 ft. E of No. 12 ..... Comp. 50 bbls. per hour; ⅜-in. choke, 5,422 ft.

Humble O. & R. Co. and Gulf Prod. Co.'s No. 20-A Lockwood & Sharp, 1,867 ft. from W line, 349 ft. from S line of lease ..... Drlg. shale and lime 3,061 ft.

Humble O. & R. Co. and Gulf Prod. Co.'s No. 15-B Lockwood & Sharp, J. Rabb Sur. ..... Drlg. sand 5,377 ft.

Humble O. & R. Co. and Gulf Prod. Co.'s No. 9 Meyers, J. Rabb Sur., 1,028 ft. E of No. 8 ..... Drlg. shale 3,909 ft.

Powers Prod. Co.'s No. 1 Fred Weisse, Samuel Kennedy Sur., 300 ft. N of S line in center E and W of 10-ac. tract ..... Sand and shale; S.O. 5,380 ft.; cmtd. 7-in. csg. 5,280 ft.

HIGH ISLAND—GALVESTON COUNTY

Yount Lee Oil Co.'s No. 1-B Broussard & Orme, 126 ft. E of center of W line of M. Dunman Sur. ..... Drlg. shale and lime 4,125 ft.

Yount Lee Oil Co.'s No. 36 Cade, N. Fitzsimmons Sur., 600 ft. from S line, 240 ft. E of No. 34 ..... Drlg. shale and lime 4,855 ft.

Yount Lee Oil Co.'s No. 1-B Cade, N. Fitzsimmons Sur., 488 ft. from S line, 320 ft. from E line ..... Drlg. gumbo 1,604 ft.

Yount Lee Oil Co.'s No. 17 Smith, M. Dunman Sur., 300 ft. SW of No. 14 ..... Drlg. hard shale 5,435 ft.

Yount Lee Oil Co.'s No. 18 Smith, M. Dunman Sur., 175 ft. S of No. 9 ..... Drlg. shale and lime 4,850 ft.

BATSON—HARDIN COUNTY

Danciger O. & R. Co.'s No. 1 Hooks, 95 ft. S, 150 ft. W of NE cor. of Strip 13, Donoghue Sur. ..... Tested S.W. 4,725 ft; trying to plug off bottom.

TOMBALL—HARRIS COUNTY

Continental Oil Co.'s No. 1 Agnes Theis, Joseph House Sur., 3,474 ft. from S line, 165 ft. from W line of 50-ac. tract ..... Drlg. shale 1,422 ft.

Humble O. & R. Co. and Magnolia Pet. Co.'s No. 1 Amiel Doege, C. Goodrich Sur., 1,399 ft. N, 1,013 ft. W of SE cor. 90.63 acres ..... Drlg. sandy shale 2,677 ft.

Humble O. & R. Co. and Magnolia Pet. Co.'s No. 1 Herbert Reid, Chauncy Goodrich Sur. ..... Drlg. shale 4,394 ft.

Humble O. & R. Co. and Magnolia Pet. Co.'s No. 1 Emil Schultz, 1,107 ft. N, 900 ft. E of SW cor. of 123.71 acres ..... Drlg. shale 1,602 ft.

Magnolia Pet. Co. and Humble O. & R. Co.'s No. 1 Wm. Rudel (63 acres), Joseph House Sur., 350 ft. out of SW cor. of lease ..... Pulling screen to deepen 5,528 ft.

SARATOGA—HARDIN COUNTY

Rio Bravo Oil Co.'s No. 100-A Jordit, Jordit Sur. ..... Drlg. rock 340 ft.

Seven Wells Corp.'s No. 1 Teels, T. C. Gaines Sur., NW cor. of 883-ac. tract ..... Drlg. shale 6,147 ft.

SOUR LAKE—HARDIN COUNTY

Arlis Pet. Co.'s No. 1 Sour Lake Bank, NW cor. Sec. 69, Blk. 11, H.&T.B. Sur. ..... Drlg. gumbo 1,000 ft.

ESPERSON—LIBERTY COUNTY

Cranfill-Reynolds Co.'s No. 11 Moores Bluff, Duncan Sur., 2,100 ft. from N line, 1,069 ft. from E line of 632-ac. tract ..... Cmtd. 12½-in. csg. 110 ft.

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HULL—LIBERTY COUNTY

W. B. Flynn's No. 1 Cantor, Jesse DeVore Sur., 150 ft. E and 100 ft. N of SE cor. of tract ..... No report.
The Texas Co.'s No. 8 Hannah (W.O.), Jesse DeVore Sur. ..... Heaving shale 5,133 ft; fishing. drill stem.

CONROE—MONTGOMERY COUNTY

Alpha Pet. Co.'s No. 6 Keystone Mills, Lemuel Smith Sur., 933 ft. SW of No. 2 ..... Comp. 100 bbls. per hr.; ½-in. choke, 5,100 ft.
Alpha Pet. Co.'s No. 7 Keystone Mills, Lemuel Smith Sur., 933 ft. W of No. 1 ..... Comp. 95 bbls. per hour; ½-in. choke, 5,095 ft.
Alpha Pet. Co.'s No. 8 Keystone Mills, Lemuel Smith Sur., 366 ft. S line, 466 ft. W line ..... Drlg. gumbo 350 ft.
Alpha Pet. Co.'s No. 1-B Krohn, S. H. Bryan Sur., center of 20-ac. tract ..... Drlg. shale 4,960 ft.
Bishop Oil Corp.'s No. 2 Smith & Ratcliff, W. S. Rhodes Sur., 292 ft. from W line, 316 ft. from S line of lease ..... Drlg. shale 3,822 ft.
Gulf Coast Drlg. & Prod. Co.'s No. 9-A Keystone Mills, A. S. James Sur., 933 ft. NE of No. 8, 466 ft. from NW line of lease ..... Comp. 90 bbls. per hour; ½-in. choke, 5,140 ft.
Gulf Coast Drlg. & Prod. Co.'s No. 11-A Keystone Mills, A. James Sur., 467 ft. from N line, 933 ft. S of No. 10 ..... **Drlg. 855 ft.**
Gulf Coast Drlg. & Prod. Co.'s No. 12-A Keystone Mills, A. James Sur., 467 ft. from W line, 933 ft. S of No. 11 ..... **Rig.**
Harrison & Abercrombie's No. 3 Massey, T.&N.O. Sur. No. 16, 364 ft. ft. out of NE cor. of lease ..... Comp. 65 bbls. per hour; ½-in. choke, 5,110 ft.
Houston Oil Co. and Tide Water Oil Co.'s No. 7 Cartwright, John Davis Sur. ..... Coring shale and sand 5,177 ft.
Houston Oil Co.-Tide Water Oil Co.'s No. 4 Dobbins, Ransom House Sur., 828 ft. W of No. 5 ..... Comp. 154 bbls. in 20 hrs.; ⅛-in. choke, 5,098 ft.
Houston Oil Co. and Tide Water Oil Co.'s No. 7 Hamman, C. B. Stewart Sur., 467 ft. from S and W lines of lease ..... Comp. 80 bbls. per hour; ½-in. choke, 5,135 ft.
Houston Oil Co.-Tide Water Oil Co.'s No. 2 Moore, L. Smith Sur., 250 ft. N line, 456 ft. W line of lease ..... Comp. 20 bbls. per hr.; 3/16-in. choke, 5,090 ft.
Humble O. & R. Co.'s No. 10 Dobbins, Ranson House Sur., 425 ft. N line, 466 ft. E line of lease ..... Comp. 40 bbls. per hour; ½-in. choke, 5,125 ft.
Humble O. & R. Co.'s No. 12 Dobbins, Ransom House Sur. ..... Drlg. sand 1,270 ft.
Humble O. & R. Co.'s No. 1 Easterly, C. A. West Sur., 330 ft. from E line, 15 ft. from N line of Blk. 18 ..... T.D. 5,183 ft; cmtd. csg.
Humble O. & R. Co.'s No. 5-B Hirsch, D. McIntyre Sur., 330 ft. from E line, 350 ft. from S line ..... Coring sand 5,052 ft.
Humble O. & R. Co.'s No. 37 Madeley, Ransom House Sur., 410 ft. from NW line, 281 ft. from NE line ..... Coring sand 5,060 ft.
Humble O. & R. Co.'s No. 36 Moore, Lemuel Smith Sur. ..... Coring sand 5,076 ft.
Humble O. & R. Co.'s No. 41 Moore, Lemuel Smith Sur., 2,097 ft. SW, 300 ft. SE at right angles out of most easterly NE cor. of lease ..... Comp. 90 bbls. per hour; ½-in. choke, 5,128 ft.
Humble O. & R. Co.'s No. 3 E. Moorehead, L. A. Lang Sur., 500 ft. S line, 410 ft. E line ..... Rig.
Humble O. & R. Co.'s No. 36 South Tex. Dev. Co., Theo. Slade Sur., 1,010 ft. NE of No. 35 ..... Drlg. sticky shale 5,094 ft.
Humble O. & R. Co.'s No. 1 Rogers, C. A. West Sur., 410 ft. from N line, 300 ft. from E line of lease ..... Drlg. shale 5,049 ft.
Humble O. & R. Co.'s No. 1 Woodson, C. A. West Sur., 9 ft. from N and W lines of Lot 47 ..... Drlg. shale and lime 4,728 ft.
Mo-Tex Oil Corp.'s No. 1 Krohn, S. Bryan Sur., 330 ft. from S and W lines ..... Drlg. shale 800 ft.
Navarro Oil Co.'s No. 2 Brown, E. P. Brown Sur. ..... Comp. 490 bbls. in 24 hrs.; ¼-in. choke, 5,030 ft.
Navarro Oil Co.'s No. 2 Perry hrs., T. M. Wiggins Sur., 282 ft. W line, 770 ft. S line ..... Spudded.
Showers & Moncrief's No. 2-A Dunn, Wilson Strickland Sur., 666 ft. N line, 410 ft. W line of lease ..... Rig.
R. D. Simonton, receiver's No. 1 Hooper, J. W. Watson Sur., center of S 20 acres of 60-ac. tract ..... Comp. 111 bbls. per hr.; ⅓-in. choke, 5,145 ft.
R. D. Simonton, receiver's No. 1 Hooper-Coffield, J. W. Watson Sur., center of N 20 acres of H. H. Coffield 40-ac. lease ..... Drlg. 1,650 ft.
Strake Pet., Inc.'s No. 4 Ethridge, S. H. Bryan Sur., 712 ft. W of No. 3 ..... T.D. 5,134 ft; completed.
Sun Oil Co.'s No. 10 Foster, John Bricker Sur., 933 ft. SE of No. 5 ..... Sand 5,095 ft.
Sun Oil Co.'s No. 1 McDonald, Wilson Strickland Sur., 469 ft. from W line, 409 ft. from N line ..... Comp. 78 bbls. per hour; ½-in. choke, 5,135 ft.
Texas Co.'s No. 14-A Rhodes, W. S. Rhodes Sur., 150 ft. due E No. 14 ..... Drlg. sand and shale 620 ft.
The Texas Co.'s No. 16 Rhodes, W. S. Rhodes Sur., 330 ft. S of N line, 467 ft. E at right angles from W line ..... Comp. 79 bbls. per hour; ½-in. choke, 5,131 ft.
Tide Water Oil Co.'s No. 11 Dean, W. C. C. Lynch Sur. ..... Comp. 88 bbls. per hour; ½-in. choke, 5,115 ft.
Tide Water Oil Co.'s No. 12 Dean, W. C. C. Lynch Sur., 330 ft. out of NW cor. ..... Cmtd. 10¾-in. csg. 936 ft.
Tide Water Oil Co.'s No. 5 Krohn, S. H. Bryan Sur., 990 ft. from E line, 330 ft. from S line of lease ..... Comp. 45 bbls. ½ hour; ½-in. choke, 5,124 ft.

LIVINGSTON—POLK COUNTY

Dick Schwab's No. 2 Craig, A. Viesca Sur., 330 ft. N, 330 ft. W of NE cor. of Shell's Munson 41.35-ac. tract ..... Derrick.
Dick Schwab's No. 2 Holmes-Davis, A. Viesca Sur., 157 ft. out of SW cor. 80-ac. tract ..... T.D. 4,394 ft; P.B. to 4,346 ft.
Shell Pet. Corp.'s No. 1 Munson, A. Viesca Sur., 330 ft. out of NE cor. of tract ..... Comp. 393 bbls. in 12½ hrs.; 24/64-in. choke, 4,330 ft; tubing pressure 775 lbs.; csg. pressure 1,210 lbs.

ORCHARD—FORT BEND COUNTY

Gulf Prod. Co.'s No. 36 Moore, Mark Smith Sur., 4,792 ft. S along E line from NE cor. and 325 ft. W at right angles ..... Drlg. sticky shale and lime 2,796 ft.

FANNETT—JEFFERSON COUNTY

Gulf Prod. Co.'s No. 7 Burrell, W. H. Smith Sur., 150 ft. W of No. 6 ..... Derrick.
Gulf Prod. Co.'s No. 2-A Junker, W. A. Smith Sur., 100 ft. from N line, 320 ft. from E line of lease ..... Drlg. gumbo 1,162 ft.

HANKAMER—LIBERTY COUNTY

Gulf Prod. Co.'s No. 2 Crowe & Jacobs, 1,700 ft. E, 1,050 ft. N of SW cor. of H.&T.C. Sur. No. 21 ..... Rig.

HOCKLEY—HARRIS COUNTY

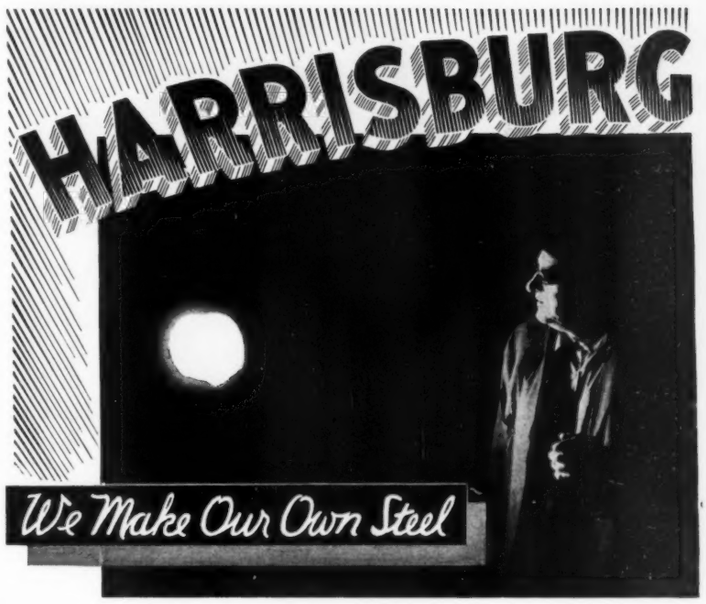
John Deering's No. 4 Warren, T. A. Scully Sur., 250 ft. SW of Texas Co.'s No. 2 Warren ..... Spudded.

PORT NECHES—ORANGE COUNTY

The Texas Co.'s No. 1 Orange Nat. Bank, 150 ft. out of NW cor of lease, Jacob Beaumont Sur. ..... T.D. 4,799 ft.; reaming.

GRETA—REFUGIO COUNTY

Alamo Oil Co.'s No. 2 O'Brien, E. H. Winfield Sur., 536 ft. S of N line in center E and W of 50-ac. tract ..... Drlg. hard shale and lime shells 2,510 ft.
Atkins & O'Neil's No. 1 O'Brien, 960 ft. N of S line of J. T. McGrew Sur., 750 ft. W of R.R. ..... Drlg. hard sandy shale 5,038 ft.



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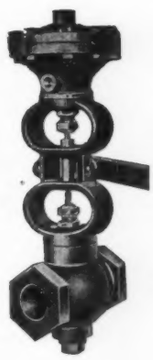

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Atlantic Oil Prod. Co.'s No. 1 O'Brien, E. H. Winfield Sur., Blk. 5, 466 ft. from S line in center of block E and W ..... Derrick.
Blanco Oil Co.'s No. 1 J. M. O'Brien, E. H. Winfield Sur., 330 ft. out of NE cor. of 50.86-ac. tract ..... Cmtd. 12½-in. csg. 1,231 ft.
Blanco Oil Co.'s No. 1 J. J. O'Brien, N. C. Crunk Sur., 150 ft. from N and W lines of 107-ac. lease ..... Drlg. sand 2,194 ft.
Blanco Oil Co.'s No. 2 J. J. O'Brien, N. C. Crunk Sur., 600 ft. SW of No. 1 ..... Derrick.
Circle W Oil Co.'s No. 1 O'Brien, E. H. Winfield Sur., 463 ft. from S line of survey, 466 ft. from E line of 112-ac. tract ..... Derrick.
Dash Prod. Co.'s No. 1 J. M. O'Brien, N. S. Crunk Sur., 150 ft. out of most easterly cor. of 50-ac. tract .. Drlg. rock 3,973 ft.
Greta Oil Corp.'s No. 3 O'Brien, E. H. Winfield Sur., 150 ft. out of SW cor. of tract ..... Rig.
Heep Oil Corp.'s No. 1-B O'Brien, N. S. Crunk Sur. .... Cmtd. 13-in. csg. 1,029 ft.
Heyser & Heard's No. 1 O'Brien, E. H. Winfield Sur., 330 ft. out of SW cor. of 50-ac. tract ..... Drlg. sand, lime, shell and boulders 1,147 ft.
Edwin M. Jones' No. 1 O'Brien, E. H. Winfield Sur., Blk. 4, 466 ft. from S line in center E and W..... Rig.
Nesral Oil Co.'s No. 1-A Wilson Heard, M. J. Ximines Sur., 330 ft. out of NE cor. lease ..... T.D. 296 ft; waiting comp. gas relief well.
Nesral Oil Co.'s No. 1 Ira Heard, M. J. Ximines Sur., 330 ft. out of NW cor. of 25-ac. tract ..... Rig standing; waiting on relief well.
Smith & Flobott's No. 1 O'Brien, E. H. Winfield Sur., 150 ft. out of SW cor. ..... T.D. 315 ft; cmtd. 10¾-in. csg. 271 ft.
Vidauri Oil Co.'s No. 1 Welder, 330 ft. S of N line of James T. McGrew Sur., and 700 ft. W of R.R. .... Drlg. sand and shale 4,410 ft.

REFUGIO—REFUGIO COUNTY

United Prod. Corp.'s No. 1-A M. F. Lambert, 666 ft. from N line, 822 ft. from W line of Hews & Brown Sur. ..... No report.

SOUTH LOUISIANA FIELDS

ACADIA PARISH

Massert et al's No. 1 Marsh, 4,960 ft. S, 470 ft. E of NW cor. Sec. 44-9s-1e ..... Drlg. 900 ft.

ASSUMPTION PARISH

Barnsdall Oil Co.'s No. 1 Williams, 330 ft. out of NE cor. Sec. 38-14s-14e ..... Shale 5,100 ft.

CALCASIEU PARISH

Quintana Oil Co.'s No. 1 Nelson, 1,515 ft. N, 85 ft. W of SW cor. Sec. 23-10s-9w ..... Drlg. shale 5,600 ft.
Union Sulphur Co.'s No. 1 Stout, 1,237 ft. N, 1,167 ft. W of SE cor. Sec. 36-8s-8w ..... Drlg. hard shale and lime 6,250 ft.

CAMERON PARISH

The Texas Co.'s No. 8 State-Calcasieu Lake, 14,355 ft. W, 3,270 ft. N of NE cor. Sec. 1-14s-9w ..... Abd. 3,317 ft.

CAMERON MEADOWS—CAMERON PARISH

Burton-Sutton Oil Co.'s No. 1 School Land, 500 ft. W and 20 ft. N of SE cor. Sec. 16-14s-13w ..... Coring sand and shale 5,563 ft.

DARROW—ASCENSION PARISH

Rio Bravo Oil Co.'s No. 1 Community, 200 ft. N line, 1,500 ft. E at right angles from SW cor. Sec. 15-10s-2e ..... Drlg. sidetracked hole 3,976 ft.

GUEYDAN—VERMILLION PARISH

Pure Oil Co.'s No. 4 Alliance Trust Co., 578 ft. from N line and 1,921 ft. from W line of Sec. 34-11s-1w.. Sandy shale; S.O. 3,507-49 ft; trying to make D.S. test.
Pure Oil Co.'s No. 5 Alliance Trust Co., 525 ft. from N line, 530 ft. from W line of Sec. 34-11s-1w ..... Twisted off 3,981 ft.
Pure Oil Co.'s No. 4 Mulvey, 1,721 ft. from N line, 2,515 ft. from W line of Sec. 34-11s-1w ..... Drlg. sand and gravel 440 ft.

LOCKPORT—CALCASIEU PARISH

Magnolia Pet. Co.'s No. 8 State-Bayou D'Inde, 865 ft. E, 570 ft. N of SW cor. NE Sec. 8-10s-9w..... Pulling screen to deepen 6,452 ft.
Union Sulphur Co.'s No. 5 Martha Moss, Sec. 8-10s-9w... Drlg. shale and lime 3,876 ft.

BLACK BAYOU—CAMERON PARISH

Shell Pet. Corp.'s No. 15 Watkins, 1,890 ft. from N line and 680 ft. from E line of Sec. 18-12s-12w ..... Sand 4,451-75 ft.; to make D.S. test.

HACKBERRY—CAMERON PARISH

Gulf Ref. Co.'s No. 12 Irwin, 865 ft. N, 518 ft. E of SW cor. Sec. 44-12s-9w ..... No report.
Wilfred Lahey's No. 1 Aroux, center 2-ac. tract, Sec. 36-12s-10w ..... Rock 2,610 ft.
Pop Oil Co.'s No. 1 Yount Lee, 3,996 ft. W and 100 ft. N of SE cor. Sec. 19-12s-10w ..... Rock 2,615 ft.
Union Sulphur Co.'s No. 7 Gulf Land-Humble lease, 1,010 ft. N, 661 ft. E of SW cor. Sec. 12-12s-10w... Spudded.

IOWA—CALCASIEU AND JEFF DAVIS PARISHES

Magnolia Pet. Co.'s No. 1 Bowman, 330 ft. out of NE cor. S½ NW Sec. 12-9s-7w ..... Drlg. sand 7,200 ft.
Magnolia Pet. Co.'s No. 4 Waite, Sec. 12-9s-7w, 330 ft. from E line, 660 ft. S of No. 3 ..... Drlg. shale 1,830 ft.
Magnolia Pet. Co.'s No. 2 Willett, 990 ft. N, 330 ft. E of SW cor. NW Sec. 7-9s-6w ..... Rig.
Shell Pet. Corp.'s No. 4 Fontenot, Sec. 7-9s-6w, 330 ft. out of NW cor. of lease ..... Comp. 725 bbls. dly.; ¼-in. choke, 6,926 ft.
Shell Pet. Corp.'s No. 4 Heyd, 2,122 ft. W, 1,310 ft. S of NE cor. Sec. 13-9s-7w ..... Blowing wild; T.D. 4,929 ft.
Shell Pet. Corp.'s No. 2 Stafford, 330 ft. from W line and 265 ft. from S line of NW Sec. 18-9s-6w ..... Drlg. sand and brittle shale 5,543 ft.
Shell Pet. Corp.'s No. 1 Tuten, 265 ft. S, 330 ft. W of NE cor. SW Sec. 13-9s-7w ..... Drlg. surface formation 80 ft.

JEFFERSON DAVIS PARISH

Humble O. & R. Co.'s No. 2 Devilbiss, 1,850 ft. S, 350 ft. W of NE cor. Sec. 14-9s-4w ..... Drlg. hard sand 7,795 ft.

JENNINGS—ACADIA PARISH

Yount Lee Oil Co.'s No. 13 Houssiere-Latrielle, Sec. 47-9s-2w, 300 ft. E of No. 12 ..... Drlg. shale 3,875 ft.

STARKS—CALCASIEU PARISH

Union Sulphur Co.'s No. 1 Industrial, 1,916 ft. S, 2,254 ft. W of NE cor. Sec. 30-9s-12w ..... Salt 4,011 ft.
Union Sulphur Co.'s No. 2 Industrial, 1,245 ft. N, 390 ft. E of SW cor. Sec. 20-9s-12w ..... Drlg. shale 3,935 ft.

SULPHUR—CALCASIEU PARISH

Union Sulphur Co.'s No. 744 fee (W.O.), 2 ft. S, 34 ft. W of C Sec. 29-9s-10w..... Drlg. shale 5,610 ft.
Union Sulphur Co.'s No. 783 fee, Sec. 29-9s-10w ..... Shale 4,965 ft.
Union Sulphur Co.'s No. 784 fee, 1,464 ft. N, 1,199 ft. E of center of Sec. 29-9s-10w ..... Rig.

ST. MARTIN PARISH

Standard Oil Co. of Kansas' No. 1 E. B. Hopkins, Sec. 33-10s-6e ..... Drlg. shale 2,915 ft.

TERREBONNE PARISH

Sun Oil Co.'s No. 1 State-Taylor Bayou, 3,216 ft. S, 3,790 ft. E of NW cor. Sec. 22-21s-14e ..... Drlg. shale 3,002 ft.
The Texas Co.'s No. 8 State-Caillou Island, 1,050 ft. S, 2,770 ft. E of NW cor. Sec. 20-23s-20e ..... Oil sand 5,972 ft; drlg. plug.
The Texas Co.'s No. 8 State-Dog Lake, 4,067 ft. W, 1,877 ft. N of SE cor. Sec. 31-21s-16e ..... T.D. 5,400 ft; sidetracked at 3,804 ft.; drlg. new hole 4,920 ft.
The Texas Co.'s No. 1 State-Four Isle, 1,800 ft. N, 1,700 ft. W of SE cor. Sec. 22-21s-14e ..... Drlg. shale 5,600 ft.

TEXAS

MISCELLANEOUS WILDCATS

AUSTIN COUNTY

Turnbull et al's No. 1 Watson, Stephen F. Austin Sur. No. 6, 150 ft. out of SE cor. of 115.6-ac. tract ..... Rig.

BRAZORIA COUNTY

E. A. Anderson et al's No. 1 Reynold, Johnson, Walker & Borden League, 5,502 ft. from W line, 850 ft. from W line of 122-ac. lease ..... Drlg. gumbo 3,005 ft.
Amerada Pet. Corp. and Rycade Oil Corp.'s No. 4 Seaburn, Austin & Williams Sur., 150 ft. W of No. 3 on line with Nos. 1, 2 and 3 ..... Salt 4,211-64 ft.
Danciger O. & R. Co.'s No. 2 Hunt, 6,550 ft. from E line, 5,550 ft. from S line of W. Carson Sur. ..... S.D. 7,399 ft.

BRAZOS COUNTY

F. H. Scott's No. 1 Klintworth, I. Curd Sur., 300 ft. NE line, 400 ft. SE line of tract ..... Cmtd. surface csg.
Stone Oil Co.'s No. 1 Walling, Alex De la Garza Sur., 150 ft. from E line, 300 ft. N of river ..... Derrick.

CHAMBERS COUNTY

Mills & Jones' No. 1 Gan, John S. Roberts Sur., 255 ft. W, 1,052.72 ft. S of NE cor. of 138-ac. tract .... Sand rock 5,025 ft; S.D.

COLORADO COUNTY

Fabrigus & Poole's No. 1 Lake Side Irrigation, 1,500 ft. SE, 500 ft. NE NW cor. Patrick Real Sur. ..... T.D. 1,445 ft; cmtd. 12¼-in. csg. 1,150 ft.
Humble O. & R. Co.'s No. 1-B O. M. Powell, 1,399 ft. from S line, 467 ft. from W line of Sec. 45, I.&G. N. Sur. ..... Drlg. shale 3,292 ft.
McCulloch Oil Co.'s No. 1 Kansteiner, Leiander Beason Sur., 300 ft. out of NE cor. of tract ..... Drlg. sandy shale 2,315 ft.
Plymouth Oil Co.'s No. 1 Broussard, 2,200 ft. N and 426 ft. W of SW cor. Sec. 47, I.&G.N. Sur. ..... Derrick.
Plymouth Oil Co.'s No. 1 Ream, 330 ft. out of NE cor. of I.&G.N. Sur. No. 47 ..... Deepened to 6,211 ft.; tried to make D.S. test.
Weimar Oil Co.'s No. 1 H. T. Brandt, F. Pettus Sur., 250 ft. from N line, 250 ft. from E line of tract .... Drlg. sand and shale 5,017 ft.
Weimar Oil Co.'s No. 1 Miller ranch, approx. center H.&T.B. Sur. No. 9 ..... Derrick.

FORT BEND COUNTY

Fresno Oil Corp.'s No. 1 M. T. Wood, T. Gleason Sur., center of 10-ac. tract (Blk. 474) ..... Drlg. shale and boulders 3,450 ft.

GRIMES COUNTY

Cambrian Oil Co.'s No. 1 W. V. Sangster, John Moore Sur., 300 ft. out of most westerly NW cor. of 218-ac. tract ..... Derrick.
Koch et al's No. 1 Haferkamp, Samuel Fulton Sur., 335 ft. from S line, 347 ft. from E line of 180 acres. .. T.D. 3,517 ft; standing.
Petroleum Southwest Co.'s No. 1 Greer, Pat O'Connor Sur., 200 ft. from W line, 400 ft. from N line of 150-ac. tract ..... Drlg. sandy shale 2,980 ft.

HARRIS COUNTY

Aven Oil Co.'s No. 1 Herman Teske, J. Duckworth Sur., 150 ft. from S line and 184 ft. from E line of 160 acres ..... Coring sand 4,925 ft.
Burns, Ogg & Houston's No. 1 Kenning, H.&T.B. Sur., 330 ft. S line and 550 ft. W line ..... Derrick.
Cockburn Oil Corp.'s No. 1 C. Marcus, Wm. Hardin Sur., 1,500 ft. S along E line of 55-ac. tract from Buffalo Bayou and 300 ft. W at right angles ..... Rigging up.
Gohlson & Parson's No. 1 W. E. Freeman, 330 ft. SE cor. Sec. 57, Blk. 2, H.&T.C.R.R. Sur. ..... Drlg. shale 2,640 ft.
Hamill Drlg. Co.'s No. 1 Clara W. Walker (38 acres), Chas. Sage, 250 ft. W of E line, 660 ft. S of south bank of Buffalo Bayou ..... Drlg. gumbo and boulders 2,400 ft.
Hamilton et al's No. 1 Hargroves, W. C. Ry. Sur. No. 10, Blk. 1; 1,750 ft. from E line, 645 ft. N line .... Drlg. shale 4,536 ft.
Huffman Dome Dev. Co.'s No. 1 E. M. House, Mary McGruder Sur., 590 ft. E of NW cor. H.E.&W.T. Ry. and 954 ft. N at right angles ..... Drlg. sand and shale 5,004 ft.
H. B. Jordan's No. 1 Cochran, J. L. Jordan Sur., 1,950 ft. S line, 1,930 ft. E line ..... Drlg. gumbo 1,975 ft.
Melba Oil Co.'s No. 1 L. B. House, 160 ft. from N line, 600 ft. from E line, Sec. 22, Harris County School Land Sur. ..... Derrick.
Jack Schultz et al's No. 1 Woodburn, 450 ft. NW of center of August Whitlock Sur. ..... Fishing drill pipe 5,780 ft.

JACKSON COUNTY

The Texas Co.'s No. 1 Mitchell, S. F. Austin League, 450 ft. W, 450 ft. S of NE cor. of 63-ac. tract, Lot 28, Clement Subd. ..... Drlg. sticky shale 5,502 ft.

JEFFERSON COUNTY

Sun Oil Co.'s No. 1 Paggi, 990 ft. W, 1,610 ft. N of SE cor. of T.&N.O. Sur. No. 32 ..... Drlg. shale 3,752 ft.

LIBERTY COUNTY

Yount Lee Oil Co.'s No. 1 E. W. Boyt, H.&T.C. Sur., Sec. 17, 300 ft. from S line, 2,440 ft. from E line of section ..... Drlg. shale 9,420 ft.

MATAGORDA COUNTY

Continental Oil Co.'s No. 1 Boker, 400 ft. out of SW cor. Lot 17, Robbins & Middle Subd., J. W. Criswell Sur. ..... Drlg. shale 3,450 ft.
Oils Consolidated, Inc.'s No. 1 Hawkins, 1,240 ft. NE, 350 ft. NW of S cor. of Daniel McCarthy Sur. ..... Derrick.
United North & South Dev. Co.'s No. 1 Unit 6 (No. 2 Stoddard), 25 ft. each way out of NW cor. of Lot 19, Buckeye Townsite ..... T.D. 7,836 ft.; sidetracking 5,155 ft.
United North & South Dev. Co.'s No. 1 Unit 14 (No. 1 Dr. Plotner), 1,210 ft. SE of No. 1 Stoddard and 136 ft. W of right of way of Collegeport branch of St. L.&B.M.R.R., Buckeye ..... Set 157 ft. of 5-in. screen 7,862 ft.; swbd. dry; S.D.
United North & South Dev. Co.'s No. 1 Unit 25, 1,335 ft. S, 1,000 ft. E of No. 1 Unit 6 ..... Coring sandy shale 7,811 ft.

MONTGOMERY COUNTY

Fostoria Oil Co.'s No. 1 Foster Lbr. Co., 1,180 varas W, 627 varas N of SE cor. H.T.&B. Sur. No. 2 ..... Drlg. sand and shale 4,322 ft.
Showers & Moncrief's No. 1 Rohlf, 694 ft. from S line, 3,325 ft. from W line of Daniel Garrett Sur. (Abst. 224) ..... Running surface pipe 725 ft.
L. C. Thorpe's No. 1 Sutherland, 2,450 ft. from E line, 1,350 ft. from N line of C. McRae Sur. ..... Derrick.

POLK COUNTY

C. E. Stewart's No. 1 Stephenson, E. Stevenson Sur. (Abst. 761), 1,633 ft. from N line, 920 ft. from W line of 217 acres ..... Rig.

VICTORIA COUNTY

Gulf Prod. Co.'s No. 4 Keeran, Martin DeLeon Sur., 3,320 ft. N 41 deg. 43 min. W, parallel to NE line of lease from No. 1 ..... Drlg. wtr. sand 4,180 ft.
The Texas Co.'s No. 6-A McFaddin, 5,600 ft. from NE line, 250 ft. from SE line of A. J. Gray ..... T.D. 2,424 ft; pumping wtr. into sand 1,987-2,010 ft. to kill gas pressure.
The Texas Co.'s No. 7 McFaddin, 6,600 ft. S 15 deg. W, 450 ft. N 75 deg. W at right angles from the NE cor. of the A. J. Gray Sur. ..... T.D. 1,176 ft; blowing gas and mud.

WALLER COUNTY

Hobson & Moore's No. 1 Peters, Justo Liendo Sur., 590 ft. W of creek, 1,144 ft. N of S cor. ..... No report.

WASHINGTON COUNTY

Clark & Cowden's No. 1 F. A. Ammons, S. Woodward Sur., 16,500 ft. from N line, 775 ft. from E line of survey ..... Derrick.

WHARTON COUNTY

Pure Oil Co.'s No. 1 Stewart, 2,419 ft. NW, 1,650 ft. NE of S cor. of Sec. 25, Morris & Cummings Sur. ..... T.D. 8,015 ft; P.B. to sand at 5,963-71 ft; running 9⅝-in. csg.
Pure Oil Co.'s No. 1 Chas. T. Kuntze, 2,183 ft. from NW line, 467 ft. from SW line, Sec. 27, Morris & Cummings Sur. ..... Drlg. shale 5,010 ft.
Smith & McDannald and Shell Pet. Corp.'s No. 1 Ridgeway, 1,980 ft. from S, 660 ft. from W of NE cor. Sec. 8, H.&T.C. Sur. ..... Drlg. hard shale 3,735 ft.

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New Pools in Several States in First Half

(Continued from Page 34)

East Texas 39 gravity crude was sold below the posted market price and at prices that failed to provide enough cash to some of the illegal producers to carry on their program, which inevitably called for the installation of pumping equipment.

No new pools were opened in the East Texas or East Central Texas area in the half year. Wildcat failures were completed in 21 counties, 36 dry holes having been abandoned in the five counties in which lies the East Texas Field.

Rocky Mountain Fields

Montana, Wyoming, Utah, Colorado and New Mexico, comprising the Rocky Mountain fields, did nothing to depress the market in the first six months of the year. Small discoveries of oil or gas and a little in the way of pool extensions summed up the results of a very dull half year. In Glacier County, Montana, a pool was opened on the North Cut Bank Dome, near the Canadian boundary line. The Cut Bank Pool and the Dry Creek Pool were extended.

Central and Western Texas

The North Texas, Central Texas, West Texas and Panhandle Texas fields suffered from too much East Texas and too much Conroe. Relatively little attention was paid to developing the old fields or to drilling for new pools, yet there was more work as a whole than in the first half of last year. No important discoveries were made. Ward County was the busiest field in West Texas, due partly to the low price of drilling in that area.

Important Discovery in Michigan

In Greendale and Porter Townships in Midland County, Michigan, a very important and richly productive pool was developed in the first half of this year, 25 oil wells were completed, one of which had an initial production of 5,000 bbls. This new area was really opened in December, 1932, but not until March was its wealth of oil made sure and after that development was rapid. Michigan did not suffer deep cuts in crude oil prices and while production was curtailed greatly, producers were fairly well paid considering general conditions.

California Was Quiet

The Mountain View Field in Kern County, California, was definitely proven in May by a 2,000-bbl. well from the Santa Margarita horizon. The Kettleman Hills Middle Dome was removed from the doubtful class in April, 1933.

Extension in North Louisiana

Extension of the Zwolle Field in North Louisiana, and the development of the new Converse Field, the Blanchard gas field in Caddo Parish and the Rodessa Trinity gas field in the same parish were the main features of work in the big area which includes North Louisiana, Arkansas and Mississippi. Much leasing was done in the three states to provide for the future. It is believed that the future of North Louisiana as an oil country lies in the possibility of paying production at deeper levels, particularly from the Trinity sand.

Outside of Michigan the fields east of the Mississippi River reported only routine completions.

California Fields

(Continued from Page 110)

spective tests and indications point to early work by the Doyle Petroleum Co., Long Beach Petroleum Co., Peters Oil Co. and R. M. Thomas. The Richfield district became a hot spot several weeks ago when Otis Hoyt recompleted his No. 15 flowing 860 bbls. of clean 30.6 gravity oil and 740,000 feet of natural gas a day after redrilling and deepening the hole to 3,823 feet. This well is pumping 148 bbls. of clean 30.5 gravity oil daily.

Dominguez

Two new wells are expected to be completed in the Dominguez Field of Los Angeles Basin within the next few weeks, as both No. 22 Hellman of the Union and No. 45 Reyes of the Shell are rotating in the pay. Each of these companies, incidentally, has started rig construction for one new well in order to keep the present crews employed. The Sunrise Petroleum is making progress in No. 1 Dominguez, and although this project is located near the edge of the structure, the company stands an excellent chance of developing production.

The Standard Oil Co. should finish two new wells in the West Coyote district within the next few weeks as No. 53 Emery and No. 113 Murphy are rotating in the pay. The Universal Consolidated, a subsidiary of the Richfield Oil Co., has resumed drilling operations on No. 1 Cruz, a projected Miocene test in the Montebello Field of Los Angeles Basin. This well, located in the extreme eastern part of the structure, was suspended several weeks ago at 6,311 feet. In the Playa Del Rey Field, the Union is starting a new well on the Vidor lease in the eastern end of the field.

Louisiana-Arkansas Fields

(Continued from Page 106)

toch which showed salt water with a little oil and is shut down.

In the Converse area of Sabine Parish, Nick Barbare gave No. 1 Ryals, NW NW Section 27-9-13, a mile east of production, a shot of acid at 1,991 feet, total depth, and was waiting results after testing 250 feet of oil in the hole. Helena Oil & Gas Co.'s No. 1 H. A. Pugh, SE SE Section 18-9-13, half a mile north of the discovery well, completed at around 1,600 feet, drilled to 2,043 feet after testing an estimated 15 bbls. at 1,825 feet, plugged back to 1,780 feet and is awaiting results from a shot of acid. H. C. Lessenger's No. 1 Bowman-Hicks, SW SW Section 13-9-13, 3 miles east of production, is shut down for orders at 2,456 feet without a show anywhere along the log. Joe Modisette's No. 3 Frost-Johnson, NE SW Section 16-9-13, a quarter mile northeast of his producer in Section 20 at 1,895 feet, is shut down at 3,190 feet after a show of gas at 3,040 feet. It is understood the test is being refinanced to try for production in the Glen Rose or deeper horizons of the Trinity series. E. M. Self set surface casing on No. 1 G. I. Paul, NE SW Section 9-9-13, previously reported as an abandoned derrick, set surface pipe at 60 feet and shut down.

J. W. Bettis, trustee, tested dry on No. 1 Shull, NE SW Section 26-8-12, Zwolle district of Sabine Parish, but the hole later filled up 1,000 feet in oil and is waiting for results from a shot of acid at 2,320 feet. Mid-Continent Crude Oil Purchasing Co.'s No. 1 Louisiana Long Leaf Lumber Co., SE SE Section 12-7-11, Zwolle, used acid and is waiting for results at 2,875 feet following a dry test at the same depth. Southland Drilling Co.'s No. 1 Frost Lumber Co., a wildcat in Section 13-9-11, Sabine Parish, is shut down at 3,625 feet in broken shale and lime. Location is in the northeastern corner of the parish and there have been one or two small shows of gas at around 2,400-2,500 feet. Llano Del Rio Co-operative Colony's No. 1 Gulf Lumber Co. fee, SE NE Section 6-1n-9w, Vernon Parish, is shut down at 2,771 feet after a gas show several weeks ago at 1,640 feet. It is a Conroe-Jackson trend test on the west side of the state not many miles northeast of production in the Conroe Field of Southeast Texas.

ARKANSAS

South Arkasas continued quiet as usual. C. W. Alworth's No. 1 W. D. King, SE SW Section 16-17-20, Columbia County, was drilling hard shale at 1,600 feet. Gleason-Wendell Drilling Co.'s No. 1 Patterson, SE NE Section 5-19-28, Miller County, a rank wildcat, was shut down for water with the bottom in green sand at 2,380 feet. In Sevier County, R. E. Collins and others' No. 1 W. A. Craig, NE SE Section 15-10-29, was shut down for water at 1,650 feet.

There was no news from Mississippi or the border counties of East Texas, Shelby County included.

Important Discoveries in Gulf Coast Area

(Continued from Page 60)

on down as an exploratory test as the completion of a well would have called for the drilling of 15 other tests at that time. The number of obligated tests since has been reduced to seven. The hole now is at a total depth of 8,015 feet after encountering several other sands, but being in heaving shale it will not attempt to go farther. As soon as the hole can be cleared of stuck drill pipe it will be plugged back to the sand at 5,971 feet and an effort made to complete it. A second test, however, has been started already.

On what is known as the Lake View Prospect, also located in Wharton County some 20 miles northeast of Louise, a wildcat drilled by Smith & McDannald on a block owned by Shell Petroleum Corp. encountered a number of gas sands and drill stem tests indicated wells could have been made. The hole was drilled to a total depth of 6,875 feet in heaving shale after an unsuccessful attempt to make a well at 6,442 feet, but now has been plugged to 3,850 feet where it is standing. The rig has been moved off, but it is anticipated that later an effort will be made to complete the well as a gasser to supply fuel for further drilling operations. A second test has just been rigged up.

Wharton County was one of the most actively wildcatted counties on the coast during the first half of the year. Half a dozen interesting tests on as many different prospects were drilled although to date the Louise and Lake View areas have been the most promising. Interest still is centered on leasing in the county and considerable geophysical work has been and is being done.

Opening of the Hockley Dome

First commercial production at Hockley, Harris County, one of the oldest known domes on the coast, was obtained in John Deering's No. 2 Warren, completed in February estimated initially at 300 bbls. daily from a sand at 2,411-26 feet. The well settled to around 50 bbls., which production it has maintained for some time. Location of the well is on the northwest side of dome. A couple of other short-lived wells were completed in 1920 and 1924, these being on the northeast side. A total of more than 70 tests has been drilled at Hockley although in the last several years there has been virtually no development. Since the completion of the above producer, another test, 200 feet south and 100 feet west, has been drilled by the same operator but this missed the pay and has been abandoned at 2,700 feet. Another test now is drilling.

Amerada Petroleum Corp. and Rycade Oil Corp. brought in a well making initially 96 bbls. an hour in their No. 3 Seaburn at East Stratton Ridge, Brazoria County, from sand at 4,405-4,500 feet. Although pinched back, it soon started making a large quantity of water and after a couple of weeks on production it was killed and plugged back 20 feet but again made water. It now has been abandoned temporarily and another test started. This production is about a mile east of some small production which was obtained at one time on the original Stratton Ridge Dome. East Stratton Ridge is a geophysical prospect, although so far it has not been determined whether it is a separate dome or whether it has some connection with Stratton Ridge. The producer is the third test drilled by the above operators, the first, located to the east, going into salt at a comparatively shallow depth, while the second, located between it and the old Stratton Ridge Dome, although a deep test, failed to find salt.

Gas in Grimes County

Among the more recent discoveries has been the completion of a gas well in Petroleum Southwest Co.'s No. 1 Greer, Pat O'Connor Survey, on Carlos prospect in Grimes County. This well, in a sand at a total depth of 2,750 feet, was estimated good for 10,000,000 feet of gas, but it also made some water, and has been killed preparatory to deepening in exploration of lower horizons. This is the first actual production in the county, which borders Montgomery County, in which Conroe is located, to the west. Carlos, however, is an old prospect and a number of tests have been drilled with some encountering interesting showings.

On the Nursury block in northern Victoria County, Quintana Oil Co.'s No. 1 McCormic, S.A.&M.G. Survey, Section 3, made a high pressure gas well at 6,150 feet, taking in 700 feet of pay through the Yequa and Cook Mountain. The well was killed and deepened to 7,400 feet for a test of the Mount Selman, but was abandoned there as dry.

East Hackberry Extension

Production at East Hackberry was extended to the extreme northeast flank of the dome by the Texas Co.'s No. 10-B State, which came in flowing 2,600 bbls. daily from sand at 7,267 feet. This dome now is producing from flank sands along the south side and northwest side and from shallow sands and cap rock on top the dome.

Development of a new Miocene sand around 3,900-4,000 feet at Manvel, Brazoria County, resulted in the addition of considerable important production at that field by the Texas Co. Original wells, which were drilled to a deep Oligocene sand around 5,500-5,600 feet, proved disappointing. The Manvel Field was fairly well defined on the north by the drilling of several deep dry holes and drilling now is being directed chiefly to the southwest and south.

Gulf Production Co. extended production of its Hankamer Field approximately 3,000 feet east by its No. 1 Crowe & Jacobs, H.&T.C. Survey, Section 21, which flowed approximately 250 bbls. of fluid, 30 per cent b.s. and water from sand at 4,921 feet, but this was killed and the hole deepened to 6,756 feet and abandoned. A second extension test is drilling. Several miles farther east Yount Lee Oil Co. has drilled two tests to below 9,300 feet without developing anything of particular importance. The second test, now drilling, found some gas showings around 9,200 feet and a string of casing was run to 9,155 feet, but the showings have been passed up without testing.

Thompson an Important Field

Thompson, a coastal field second in size and potential value only to Conroe, and where a consistent and systematically active drilling program has been carried on, received a number of important extensions, particularly on the north end, but the field now has been fairly well defined on all sides. Deep dry holes have been drilled this year on the north, west, east and south.

Outstanding among the specific open lease and royalty plays which took place, in addition to that in the Tomball-Huffsmith district, were southwestern San Jacinto County and northern Liberty County, northwestern Harris and northern Waller County, the Bellville district of central Austin County, southern Grimes County and the Lizzie district of southern Colorado and northern Wharton Counties. However, due to the almost general lease activity and taking of geophysical blocks of some kind in almost all counties and parishes of the coast, it is a little difficult to single out the above districts.

ALLEGES INFRINGEMENT

Action in equity, Case No. 876, has been filed in Tulsa, by the Tretolite Co., naming the Burke-Greis Oil Co. as defendant, and alleging infringement of the plaintiff's oil treating patent No. 1,467,831. Two suits alleging infringement of this and other related patents are already on file in southern California, one (No. 7-40J) naming Dehydrators, Ltd., Italo Petroleum Corp. of America, and the receiver for the latter, as defendants, and the other (Y-14M) naming All-American Chemical Products Co. and C. W. Camp. Two additional suits filed last year in local Federal Courts have been concluded with the issuance of consent decrees and permanent injunctions.

Kansas Fields

(Continued from Page 105)

location. Gypsy Oil Co.'s No. 1 Stoltenberg, SW cor. SE NW Section 22-16-10w, is a rig.

Finney County

National Refining Co.'s No. 1 Smith, SE cor. SW Section 2-23-29w, is a location.

Greenwood County

Abe Markus' No. 1 Smith, SW cor. NW NW Section 5-24-12, is a machine. R. F. Findeiss' No. 1 Mayer, C SW SE Section 9-24-12, was abandoned at 1,695 feet. Miller & Gaines' No. 1 Elliott, C N half NE NW Section 18-26-9, is a location. Charles Reeser's No. 1 Hall, NW cor. SE Section 8-26-9, was abandoned at 2,285 feet.

Harvey County

Murray and others' No. 3 Dyck, NE cor. SW Section 8-22-3w, is a location. Same company's No. 4 Dyck, SE cor. NE SW Section 8-22-3w, is a location. Frost and others' No. 5 Martens, NW cor. SE SE Section 19-22-3w, is a rig. Mabee and others' No. 2 Martens, SE cor. NE SE Section 19-22-3w, an old well drilling deeper, total depth 3,225 feet. Olson Oil Co.'s No. 1 Sabine, C SW SW Section 18-23-3w, made 145 bbls. from 3,355-70 feet.

McPherson County

Mid-Kansas Oil & Gas Co.'s No. 2 Garrett, NW cor. SW NE Section 30-19-1w, is a location. Rice Oil Co.'s No. 1 Wiles, NE cor. NW NE Section 25-19-2w, is a location. Lario Oil & Gas Co.'s No. 5 Miller, SE cor. Section 24-19-2w, is a location. Same company's No. 3 Law, SE cor. NE NE Section 24-19-2w, is a location. Helmerich & Payne's No. 3 Russell, CNL NW NE Section 23-19-2w, was drilling at 300 feet. Lario Oil & Gas Co.'s No. 1 Krehbiel, SW cor. NE Section 34-21-3w, is a location. Mabee and others' No. 1 Fresen, NW cor. SW SE Section 33-21-3w, is a location. Same company's No. 2 Fresen, NE cor. SE SW Section 33-21-3w, is a location. Same company's No. 3 Klassen, SW cor. NW SE Section 33-21-3w, is a rig. Same company's No. 2 Nickkel, SE cor. NE SW Section 33-21-3w, is a location. Spence and others' No. 3 Neufeldt, NE cor. SW SE Section 16-21-3w, is a location. Hartman and others' No. 1 West, NE cor. SE SE Section 34-19-3w, was abandoned at 3,619 feet. W. D. Dunn's No. 1 Riverton, SE cor. NE SE Section 9-19-2w, was abandoned at 2,995 feet. Dickey and others' No. 2 Williams, SE cor. NW Section 26-19-2w, made 200 bbls. from 3,372-95 feet. Wakefield and others' No. 1 Koehn, CNL S half NE NW Section 36-19-2w, was abandoned at 655 feet.

Norton County

Moody & Seagraves' No. 1, NW cor. Section 24-2-22w, was drilling at 650 feet.

Rice County

Slick and others' No. 4 Schurr, NW cor. SW Section 21-20-10w, is a location. Texas Co.'s No. 2 West, SW cor. NW Section 21-20-10w, is a location. Derby Oil Co.'s No. 1 Monroe, NE cor. SE Section 31-19-9w, is a rig. Ramsey and others' No. 1 Robinson, SW cor. NW Section 32-19-9w, made 240 bbls. from 3,238-86 feet.

Reno County

Watchorn Oil & Gas Co.'s No. 1 Soper, NE cor. Section 31-25-4w, is a location. Hollow and others' No. 1 Heidernrecht, SW cor. SE NE Section 36-22-4w, made 7,500,000 feet of gas from 3,366-68 feet.

Rush County

Interstate Production Co.'s No. 1 Krebs, C SE Section 16-18-16w, is a location.

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with a MILLER
BAILER & SAND PUMP
gets the job done!

Greater Suction

enables the MILLER to bring out a full load of sand and mud every time —maximum efficiency cleaning out in half the time.

Longer Tube

25-30 foot tube

Wire Line Connecting Direct to Plunger

eliminates a rod and permits use of longer tube.

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By a simple exchange of bottoms the MILLER can be used either as a Sand Pump or Bailer, in addition there is also the Star bottom used for cutting sand loose—4 Type Bottoms for every condition, CHISEL, BAILER, STAR and SAND PUMP.

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TECHNICAL QUESTIONS ANSWERED

By Charles K. Francis, Ph. D., Technical Editor

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible.

Inquiries must be signed but only the given initials will be printed. The source of the questions is considered to be confidential.

Questions requiring a dicussion of patents, the use of intricate formulas, extended computations, or cost estimates cannot be considered.

When the matter is of general interest the reply will be published within a reasonable time.

Iodine and Iodine Compounds As Knock Inhibitors

I have heard the statement made that were it not for the comparative scarcity of tincture of iodine this chemical could be used successfully as a substitute for tetraethyl lead as a combustion control in gasoline. Would you please advise if this statement is true and if so in what proportion should this chemical be used?—A. J. M.

Iodine was the first substance discovered to have an influence in reducing the detonating tendency of gasoline when used as motor fuel. Its behavior led Midgley and Boyd to investigate the action of chemical compounds that were colored or produced color. Many thousand different substances were tried and the investigations finally led to the discovery of tetraethyl lead.

Free iodine and iodine compounds are recognized as knock suppressors but their efficiency is much less than tetraethyl lead. The nearest approach to the ethyl lead is another compound of lead, the diphenyl diodide, which may have a coefficient value of 80 when the ethyl compound is 100.

Aside from the high cost of iodine, quite large quantities are required to suppress detonation; the volume being on the order of 2 to 3 per cent. Of course this quantity cannot be considered because of the expense.

Some of the early references to the literature are: Midgley and Boyd, Ind. Eng. Chem., 15, 589 and 895, 1922; Midgley and McCarty, J. Soc. Auto. Eng., 14, 189, 1924; Charch, Mack, Jr., and Boord, Ind. Eng. Chem., 18, 334, 1926.

All Hydrocarbon Oils May Be Cracked to Gasoline

Is it possible to crack vegetable oils to make a good grade of gasoline? Any example will be appreciated, if you have the details?—D. R.

Any vegetable or animal oil may be converted to gasoline by the cracking process. One theory for the origin of petroleum is based on the fact that when certain fish oils were heated hydrocarbons exhibiting petroleum characteristics were obtained.

Egloff and Morrell described the preparation of "Gasoline from Cottonseed Oil" before the American Chemical Society, at New Orleans, April, 1932. The material following is from the paper as published in U.O.P. Booklet 119.

The oil was cracked by the nonresiduum method of operation at a pressure of 135 pounds per square inch and over a temperature range of 445° to 485° C.

The apparatus employed consisted of an 8-inch diameter still made from a machined flanged drop forging and companion flanged head with tongue and groove closure; a vapor line with pressure control valve; a water cooled condenser and a receiver. The still was equipped with a pressure gauge and wells for thermometers.

The pressure still was charged with 800 cc. of cottonseed oil. The still was heated until a self-generated vapor pressure of 135 pounds per square inch was reached, at which point the gas release valve was opened on the distillate receiver. The heat application was continued until 485° was reached. Above this temperature no further distillate appeared and a residue of coke remained in the pressure still. The products were gas, distillate oil, coke and water.

The following table gives a summary of the cracking results:

Cracked Cottonseed Oil

Pressure distillate:	
Per cent of charge	71.1
Specific gravity	0.772
Water, per cent	5.3
Coke, gas and loss, per cent of charge	23.6
Coke (lbs. per 42 gal. bbl. of charge)	40
Gas (cu. ft. per bbl. of charge)	.916
Motor fuel:	
Per cent of charge	58.7
Specific gravity	0.761
Initial boiling point, °C.	46
End boiling point, °C.	225
Gas oil, Diesel or furnace oil:	
Per cent charge	10.6
Specific gravity	0.912

The pressure distillate was rerun, the distillate treated with sulphuric acid, water-washed, neutralized with caustic soda and distilled with steam. The distillate was a motor fuel of the properties shown in the table.

Motor Fuel from Cottonseed Oil

Specific gravity (A.P.I. 54.4)	0.761
Color, Saybolt	30+
Doctor	Sweet
Corrosion	Negative
Sulphur, per cent	0.01
Gum (mg. per 100 cc.)	33
I.B.P., °C.	46

Per cent distilled over	Temp. °C.
5	63
10	75
20	89
50	128
90	187
End B.P.	204
Octane number	55

A hydrocarbon analysis (*) of the refined motor fuel showed the following percentages:

Hydrocarbon group	Per cent
Paraffins	37.1
Unsaturates	27.1
Naphthenes	9.9
Aromatics	25.9

*Egloff and Morrell, J.I.E.C. 18, 354 (1926).

Sun Test of Gasoline for Color Stability

Do you know of some specifications which call for the sun test of gasoline? In the positive case what is the length of exposure to sunlight and other conditions for conducting this test? What is the maximum allowable loss in color?—A. C.

Petroleum technologists agree that the color of gasoline has but little relation to performance in the motor. It is commonly considered as indicating good refining; however, gasolines of excellent color will sometimes show excessive quantities of gum and a gasoline of very poor color may contain only a small quantity of gum and which does not give any noticeable deposit in the motor. However, most gasolines which quickly go off color, when exposed to light, will usually show large quantities of gum formed under the same conditions.

The so-called sun stability tests are for the purpose of determining what change of color may be expected when the gasoline is exposed in the visible pump bowl at the retail depot. There are the additional reasons for a sun test; among these are as a plant control test, and the relation to research work. Some form of sun test is frequently mentioned in the specifications included in contracts for deliveries of large volumes of gasoline.

When the test is an adjunct to research, exposures to sunlight are sometimes made over long periods, such as months. The plant control tests may require exposures from one to eight hours. The contract tests are usually limited to one to three hours. The test may be made either with or without exposure to the air, with or without a stopper, and this condition should always be clearly specified.

The simplest sun test, and the one more often used, is that in which the gasoline is exposed to the direct rays of the sun in 4-ounce oil sample bottles. If the action of the air is desired the bottle is not stoppered. The sample must be exposed in an open place where there are no shadows and the time of day, date and temperature should be recorded. The general appearance should be noted at the end of each hour, such as the formation of any cloud, precipitate, and change in color; the terms used being slight cloud, light yellow, pink, brown, etc. At the end of the period the sample is filtered and the exact color found by means of the Saybolt colorimeter.

Some refiners make the exposure in 5-gallon bottles and the 10-gallon station bowls. The records and final color observations are made in a similar manner to that followed with the 4-ounce samples.

The loss in color on a three-hour test in a bottle, with the stopper out, varies in different contracts; a drop from +30 to +21 is considered as indicating good quality; however, some contracts have stipulated that the color after three hours exposure to the sun shall not be less than +25 Saybolt.

Chlorex Selective Solvent for Making Lube Oil

I wish to obtain a description of what is called the Chlorex Solvent Process for treating lubricating oil? What is the principle on which this process works? If you can give me this information the favor will be appreciated.—W. A. C.

The preparation of mineral lubricating oils has until very recently been accomplished by fractionation of suitable stocks, mostly by high temperatures but to some extent by low temperatures. This type of refining does not always produce a lubricating oil best suited to the conditions existing in the modern motor. There is a demand for viscosity stability under varying temperature conditions, with no tendency to form deposits of carbon in the engine. Some oils will meet one of these conditions but will be lacking in the other when refined by conventional methods. A solvent which will dissolve one form of oil without acting on others would be suitable for the separation of lubricating oils, such as the nonviscous and low viscosity oils from the higher and more desirable viscosity portions.

Chlorex is the trade name for BB Dichloroethyl ether, made by Carbide & Carbon Chemicals Corp., which has the following properties:

PROPERTIES OF CHLOREX

Formula	$Cl(CH_2)_2O(CH)_2Cl$
Boiling point	352.4° F.
Freezing point	—61° F.
Sp. gr.	1.222
Say. visc. at 77° F.	32
Same at 32° F.	39
Latent heat of vap'n.	115.4 B.t.u./lb.
Specific heat	0.369
Flash closed cup	168° F.
Solubility water at 194° F.	1.7%

The use of chlorex for making lubricating oils was described by Page, Buchler and Diggs in The Oil and Gas Journal, April 20, 1933, page 14. The material used here is from this source.

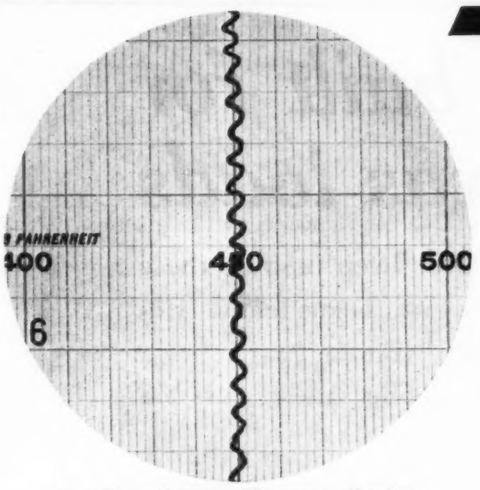
Data are given showing the selective solubility of chlorex. The high viscosity index portion is soluble to only a small extent but low V.I. oils are miscible in all proportions, so its action is to extract a raffinate with a high viscosity index.

Extractions may be made by batch application or the solvent is used in a continuous system countercurrent to the oil. In batch experiments 250 volumes of chlorex to 100 volumes of oil at 60° F. yielded about 77 per cent of 100 V.I. raffinate. The process may be combined with acid treating for improved color and with a small saving of solvent required. Wax is slightly soluble in chlorex but this does not in any way hinder the extraction.

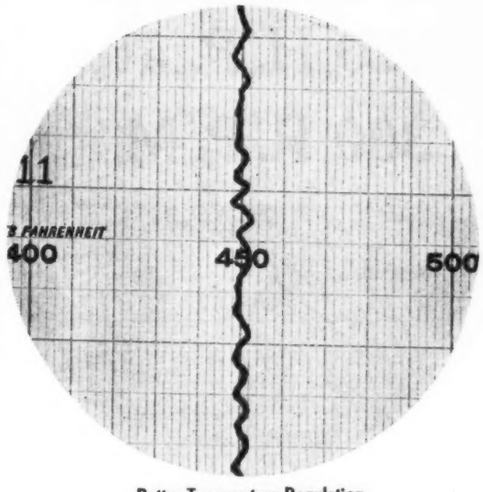
Recovery of chlorex has been accomplished by batch distillation with steam at 350° F. to 450° F., obtaining at the same time the raffinate.

The BROWN TRENDALIZER

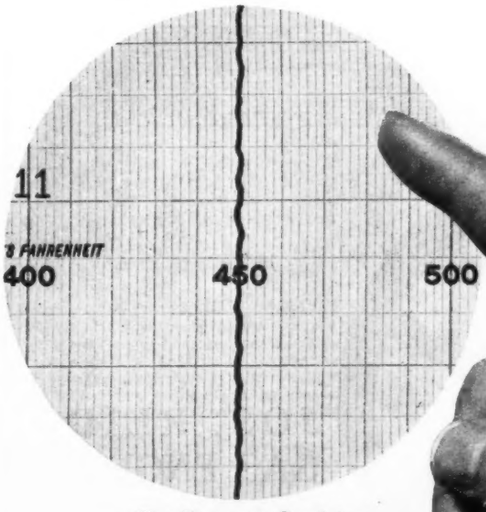
A New Method of Automatic Control



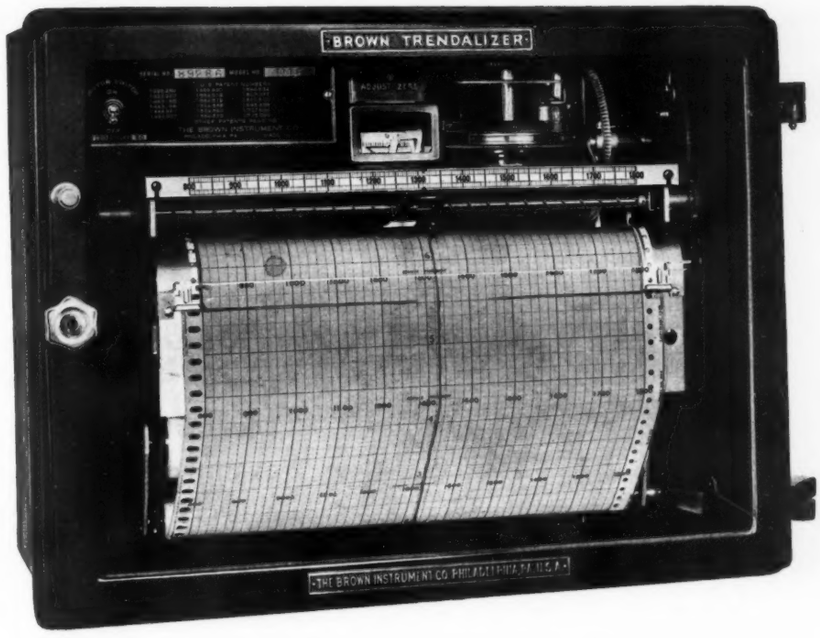
Curve Shows Character of Temperature Regulation
Produced by Two-Position Control



Better Temperature Regulation
Produced by Three-Position Control



Close Temperature Regulation
Produced by Trend-Analyzing Control



Straight Line Control
means balanced operation

THE Brown Trendalizer carries automatic control to the point where it acts like a skilled manual control operator . . . It checks temperature swings at the start and applies the proper correction without "Overshooting." It is super-sensitive to minute changes in temperature and free from manual adjustments. Temperature fluctuations are quickly restored to normal without "hunting" because the prompt action of the Trendalizer automatically prevents temperature swings.

Deviations from the control temperature are instantly corrected by a permanent shifting of the valve settings without sacrificing accuracy and the exactness of the control setting. For dependable automatic temperature control of any type furnace (old or new) apply the Brown Trendalizer . . . . . Write for information.

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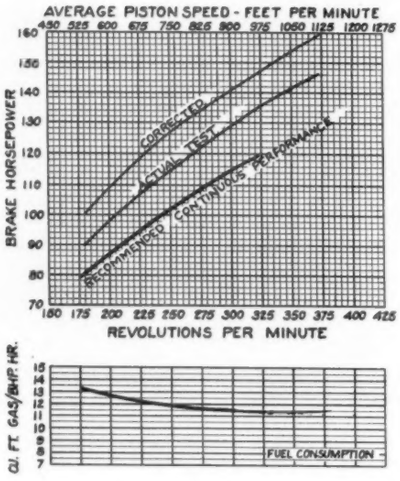
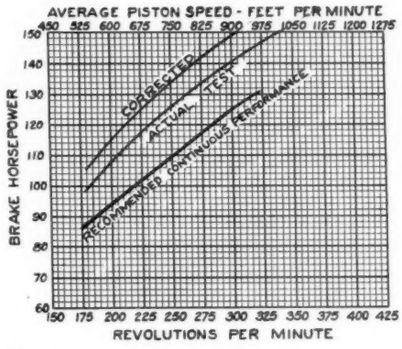
Two fine Engines built for East Texas loads

14½" x 18"
110 H.P. at
*300 R.P.M.


AVERAGE PISTON SPEED - FEET PER MINUTE
430 525 600 675 750 825 900 975 1050 1125 1200 1275
BRAKE HORSEPOWER
160 150 140 130 120 110 100 90 80 70
CORRECTED
ACTUAL TEST
RECOMMENDED CONTINUOUS PERFORMANCE
150 175 200 225 250 275 300 325 350 375 400 425
REVOLUTIONS PER MINUTE
CU. FT. GAS/BHP. HR.
15 14 13 12 11 10 9 8 7
FUEL CONSUMPTION

No finer engines have ever been built in these sizes; designed to handle East Texas loads. Entirely enclosed bed plate, timing gears, main bearings and governor. The finest possible lubrication system.

15" x 18"
120 H.P. at
300 R.P.M.

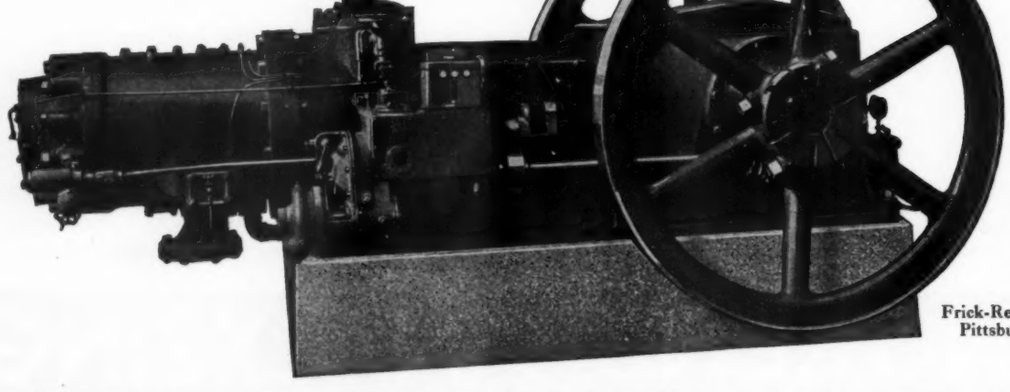

AVERAGE PISTON SPEED - FEET PER MINUTE
430 525 600 675 750 825 900 975 1050 1125 1200 1275
BRAKE HORSEPOWER
150 140 130 120 110 100 90 80 70 60
CORRECTED
ACTUAL TEST
RECOMMENDED CONTINUOUS PERFORMANCE
150 175 200 225 250 275 300 325 350 375 400 425
REVOLUTIONS PER MINUTE
CU. FT. GAS/BHP. HR.
15 14 13 12 11 10 9 8 7
FUEL CONSUMPTION

Producers, Engineers, Superintendents are invited to examine the two charts shown herewith—they indicate points worth consideration and analysis.

These two engines are characterized by a simplicity and accessibility of all working parts. Speed—Power—Economy are delivered by these engines in a quantity that is making them the most popular power unit for East Texas.

Write us direct for further data; or consult our Distributors.

TYPE C 2-CYCLE



JOS. REID GAS ENGINE COMPANY
Oil City, Penna.

Frick-Reid Supply Corp. Pittsburgh and Tulsa
R. B. Moore Bolivar, N. Y.

*Through an error in our advertisement in the June 22 issue of this magazine, this figure appeared at 180 r.p.m. instead of 300 r.p.m.

FIELD PROBLEMS FROM READERS

Edited by Thomas F. Smiley

This department is conducted in order that men connected with the drilling, producing or transporting branches of the petroleum industry may obtain aid in solving problems that confront them in their work. Readers are invited to send questions freely. These questions will be placed in the hands of persons capable of answering them authoritatively, and the answers, based on the best available information, will be published.

Each question should give as much detail as possible, especially if it involves depth of sands, types of sands and operations on adjoining or nearby properties. The source of questions will be considered confidential, and only the initials of the sender will be published. Questions involving patented processes, intricate formulas or estimates of cost cannot be answered. If an immediate answer is important, one will be given by mail when the writer requests it.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or improved old ones.

Finding Capacity of a Gas Well Flowing Into the Atmosphere

Could you tell me how many cubic feet of gas per minute will flow into the atmosphere through a quarter-inch nipple 3 inches long, the gas being under pressure of 25 pounds per square inch? What I am trying to find out is the volume of a shallow gas well with the pressure given here.—A. B.

To estimate the capacity of a well of this kind is difficult unless you are fully equipped to make gas measurements. A small error in any of the variable factors will cause a large percentage or volume error in the results.

However, the following references may be applied to your problem, but any answer must be considered as only approximate because several factors have been assumed, the variation of any one of which will affect the results.

John C. Diehl, in "Natural Gas Handbook," Metric Metal Works, Erie, Pa., states that the capacities of a well flowing through choke nipples may be computed by the following formula:

$Q = CP_u/2$ when downstream pressure, P_d, is less than one-half of the upstream pressure, P_u.

Q = quantity in cubic feet per hour.

C = hourly coefficient. (For one-fourth inch choke = 123.)

P_u = upstream or inlet pressure in pounds per square inch absolute.

P_d = downstream or outlet pressure in pounds per square inch absolute.

$$Q = \frac{123 \times (25+14.47)}{2} = 2{,}427 \text{ cu. ft. per hour.}$$

A check against this is found in a table in Johnson and Huntley's "Oil and Gas Production," which states that the flow of natural gas through pipe of 1-inch inside diameter at 25 pounds gauge pressure would be 845,150 cubic feet a day.

The number of cubic feet of gas per 24 hours of a specific gravity of 0.6 (air equaling 1.0) that will flow from the mouth of a well or pipe with opening less than 1-inch may be found by using a multiplier of 0.0625 for one-fourth inch opening.

$845{,}150 \times 0.0625 = 52{,}821$ cu. ft. per day or 2,200 ft. per hour.

Another table states that a vessel filled with air at 25 pounds pressure will permit 34 cubic feet per minute to escape to the atmosphere through a one-quarter inch opening. This equals 2,040 feet per hour. This is air and a correction should be made for natural gas which is lighter than air.

From these estimates it would appear that your well will have a capacity of 2,000 to 2,500 cubic feet per hour but these figures must be taken as approximate only.

You state that the pressure is 25 pounds per square inch. It is assumed that you mean gauge pressure at the well head. But it is not clear how you ascertained this pressure reading. You do not tell the specific gravity of the gas.

The one-quarter by 3-inch nipple may be only approximate and you have probably used a stock pipe nipple which is subject to wide variations where the flow of gas through it is under consideration. In the first place the inside diameter of this nipple may vary appreciably; it may not be smooth inside, and the inlet and outlet ends may take various shapes.

What "Underreaming at 800 Ft." Indicates Regarding Progress

I would appreciate it if you would advise me what "underreaming at 800 feet" means. I am interested in a well which has been developed that far. What does this stage of development mean and how long will it take before the well can be completed and the oil run?—G. W.

In drilling wells with either cable or rotary outfits there are times when it is necessary to enlarge the hole below the point where casing has been set. This process of enlarging the hole is called underreaming. "Underreaming at 800 feet" therefore means that the driller is enlarging the diameter of the hole below 800 feet. Deepening of the well for the time being is deferred until the underreaming is completed and the casing lowered to the new casing seat.

There is no particular significance in this operation except that the driller has found it advisable to continue on to lower depths with the hole at the size used in the upper portion.

The purpose of casing the hole is to keep out water from upper formations flowing into it and to prevent the walls from caving. The usual drilling practice is to start a large diameter hole at the surface and drill through the upper formations which contain surface water. The surface or water string of casing is then set and cemented.

After this string of casing has been set it is necessary, of course, to use a smaller diameter bit and this will drill a small hole below the upper string of casing. In rotary work this diameter hole is continued just as deep as possible so that extra strings of casing will not be needed and also to permit as large a hole as possible being drilled into the producing formation.

Suppose the hole was started with a 12½-inch bit and drilled 300 or 400 feet to pass all upper water-bearing formations. In such a hole 10-inch casing would be set and cemented. A 9⅝-inch diameter bit will pass through the 10-inch casing, so the diameter of the hole below the casing point for the string of 10-inch casing will be about 9⅝-inch. This hole will be drilled as deep as possible, say 5,500 feet and a string of 7-inch casing run in it and cemented at the bottom. This casing point is usually a short distance above the producing formation. To complete the hole a 6⅝-inch bit will be used and the hole drilled into the producing sand and a string of 5$\frac{7}{16}$-inch casing set to act as a flow string.

If the driller had set the string of 7-inch casing at some point above 5,500 feet in this instance and later found that he could underream and enlarge the hole he would do so and in that way would eliminate the need for a long string of 5$\frac{7}{16}$-inch pipe. If he did not underream the 9⅝-inch hole and lower the 6-inch pipe he would have to finish the well through the string of 5$\frac{7}{16}$-inch casing and then set a smaller string of pipe inside the 5$\frac{7}{16}$-inch casing to act as a flow string. If you are interested in oil well drilling it is suggested that you obtain a copy of Jeffery's "Deep Well Drilling."

Why Was It Called That?

WHALE OIL

Whale oil, so called because it was obtained from the whale, provided the world's chief illuminant prior to the discovery of petroleum and its utilization for lighting purposes. More than a century ago whaling was an important interest in New England. New Bedford was once the center of a whaling fleet of 500 vessels and crews numbering 20,000 men. It was believed that when the last whale had been caught the world would be left in darkness, for electricity was unavailable, and even kerosene oil was unknown. In spite of changing industrial conditions, whaling has survived. New England whalers still compete with those of Scandinavia for the whales of the Arctic as well as the Antarctic. South Georgia Island alone now has six whaling stations employing a thousand men and producing about 240,000 bbls. of whale oil annually. The oil is in demand for machine lubrication. Some of it is used for making candles.

Hard to Keep Pump Station Steel Surfaces Brightly Polished

We are experiencing trouble keeping the shafting and bright steel surfaces in our pump station polished the way we would like to. This is due in part to the extremely moist climate, to exhaust gases from the Diesel engines which are the prime movers used and to gas from the crude handled by the discharge pumps. We have been told that it is practicable to use a combination of sulphuric acid and mercury to nickel-plate cold-rolled shafting, steel governor housing, etc. Any suggestions on this subject would be appreciated. —P. L. H.

You have an extremely difficult problem because you have a combined action of rust caused by atmosphere containing salt water and the corrosive effect of sulphur products from the discharge of the Diesel engines. Either one of these conditions presents a serious problem but when they are combined it is hard to recommend anything that will help much.

On the polished shafting you might try the following for removing the rust: Brush with a paste compound of one-half ounce cyanide potassium, one-half ounce castile soap, 1 ounce whiting, and water sufficient to form a paste. The steel should be washed with a solution of one-half ounce cyanide potassium in 2 ounces of water.

This will remove the rust but what you can do to keep more rust from forming is hard to say. You want these parts bright to make a good appearance. If this were not the case a coating of petrolatum grease would be suggested. Some of these greases are made with other elements that tend to resist corrosion.

The exhaust from the Diesel engine could be corrected if the character of the fuel used is free of sulphur. But this department has failed to find out any way of removing hydrogen sulphide from air except sunlight. Likewise the salt is hard to precipitate except where you do not want it.

This department certainly would not recommend the use of a mixture of sulphuric acid and mercury. Aluminum foil is now made in very thin sheets and it might be possible to cover the bright parts with this material and stick it in place with some petrolatum grease that would serve to prevent corrosion under the aluminum foil.

How Much Time Should It Take to Splice Wire Drilling Cable?

Have you any record to show how long it should take for one man to splice a seven-eighths-inch drilling cable?—J. P.

In replying to your question, several things you have not stated must be assumed. Ordinarily two men are required to make a good wire-rope splice, and with first-rate equipment the job consumes three and one-half to four hours. This assumes a normal splice. There may be great differences in the length of splices, which would affect the length of time required to make them.

If one man is to make the splice he must have a vise or clamps and good tools if he is to complete a splice in one-third to one-half more time than the two men require. This would mean that one man could make the splice in four to six hours.

NATURAL GAS DEVELOPMENTS

Sales of Industrial Gas Register Marked Growth

Revenues of the manufactured and natural gas industry aggregated $55,563,700 for May, 1933, as compared with $59,682,600 for May, 1932, a decline of 6.9 per cent. it was announced by Paul Ryan, chief statistician of the American Gas Association.

The manufactured gas industry reported revenues of $32,204,800 for the month, a drop of 9 per cent from a year ago, while revenues of the natural gas industry totaled $23,358,900 or 3.9 per cent less than for May, 1932.

Sales of manufactured gas reported for May totaled 29,936,700,000 feet, a decline of 6.3 per cent. Natural gas sales for the month amounted to 62,095,400,000 feet, a figure approximately equal to the volume sold during the corresponding month a year ago.

The relatively better showing of the natural gas companies was the result of a pronounced increase in sales to large scale industrial users. In May, 1932, sales for this purpose amounted to 8,115,300,000 feet, but in May, 1933, rose to 9,088,500,000 feet, a gain of 12 per cent.

This increase in industrial gas sales was prevalent in most natural gas territories, reflecting the pronounced gains in industrial activity and production registered during the month. In New York, sales of natural gas for industrial purposes increased more than 46 per cent, while in Ohio the gain in this class of business was nearly 27 per cent.

The Mid-Continent area also registered pronounced gains in industrial sales, the increase amounting to 12 per cent in Kansas and 9 per cent in Texas, while in Oklahoma ordinary industrial sales increased 26 per cent and sales to main line or large scale industrial users were up 47 per cent.

Service Manual Prepared on Gas Range Installations

A new gas appliance service range manual has been prepared by the committee of the American Gas Association, on Gas Appliance Installation and Service Manual, consisting of E. R. Rothert, chairman; R. M. Conner, H. E. Heil, C. R. Miller, T. J. Perry, with C. George Segeler as secretary. This book is the first of a series which is eventually intended to cover all the appliances a fitter is called upon to adjust.

Based on many field reports it was evident that a need existed for a comprehensive manual which would enable service men and fitters to adjust properly a wide variety of makes and styles of gas appliances encountered in their daily work. It is obviously impractical, for example, for a fitter to carry with him an assorted lot of catalogs. Therefore, the committee in preparing the manual has endeavored to incorporate in it detailed and specific instructions for all of the common makes of controls and other adjustable units on the gas range.

REJECTS PRICE REGULATIONS

BOSTON, Mass., July 22.—The state senate, 16 to 20, rejected the bill regulating the price of gas in the Hyde Park district of Boston, in Dedham and in a part of Westwood.

ASK FOR LOWER GAS RATES

CHEYENNE, Wyo., July 22.—U. S. Army officials at Fort Warren have appealed to the Wyoming Board of Equalization for a reduction of 10 per cent in the natural gas rate at Fort Warren. The Colorado-Wyoming Gas Co. furnishes gas to Fort Warren and also to Cheyenne. The State Public Service Commission (composed of the same membership as the State Board of Equalization) will probably call a hearing on the question. Army officials state they will not use the gas unless there is a reduction of 10 per cent.

Casing Is Shot From Gas Well With Liquid Oxygen

The European Gas & Electric Co. spudded in a well for gas at Aichkirchen, near Lambach, Upper Austria, which by April, 1933, had reached a depth of 700 meters. As only small quantities of gas were met with, it was decided to abandon the well and to recover at least 60 meters of casing. Attempts to cut the casing with the usual apparatus having failed, it was determined to shoot.

The shooting was carried out on April 29, 1933, with liquid oxygen. An explosion was required comparable to that of 10 kilograms of 65 per cent gelatin dynamite. Eight explosion cartridges, 300 by 80 millimeters, Wiethuchter system, were provided. To saturate these cartridges 15 liters of liquid oxygen was required. The eight cartridges were placed in a cylindrical container of tin. The borehole was pumped full of mud, and the charge, under a suitable weight of iron, was detonated by electricity at 70 meters, whereupon a column of mud about 10 meters in height indicated a successful explosion. The upper lengths of casing were propelled upwards by the shot about 30 centimeters, and could be easily withdrawn.

The use of liquid oxygen was decided upon because the transport of the necessary small quantity of dynamite would have been costly and troublesome. Further, the use of dynamite was not possible, as the shooting had to be carried out within 24 hours of the placing of the order in Vienna. Liquid oxygen can be transported without special precautions. The manipulation of the apparatus is unusually simple, and special precautions to preserve the cartridges from damp are not necessary. However, it may be remarked that the mud, in which the charge was detonated, had a temperature of about 40° C. (104° F.).

This is the first shooting of a well in Austria, and the first carried out with liquid oxygen.

NEW GAS COMPANY

CALGARY, Alberta, July 22.—Organization of a huge utilities concern to be known as North American Gas Co., comprising an amalgamation of Atlantic Keystone Petroleum Co. and 49 gas companies, with more than 1,000 producing wells in the United States, was announced by J. W. Jeffernan of Edmonton.

GAS INDUSTRY RETURNS DROP

NEW YORK, July 22.—Revenues of the manufactured ond natural gas industry totaled $55,563,700 in May, a decrease of 6.9 per cent from a year ago, reports the American Gas Association. Sales of manufactured gas dipped 6.3 per cent, while those of the natural product approximately equaled May, 1932, sales.

ASSETS SOLD BY RECEIVERS

WILMINGTON, Del., July 22.—Assets of the Appalachian Gas Corp. were sold by the organization's receivers to the corporation's reorganization committee for $825,000. The assets are to be transferred by the committee to a new corporation to be formed.

State Auditor Says Texas Losing Natural Gas Taxes

AUSTIN, Tex., July 22.—Moore Lynn, state auditor, says that Texas probably is losing a large amount of taxes because of failure to require correct valuations of natural gas for taxation purposes. He submitted to Governor Miriam A. Ferguson a report on occupation taxes, oil production and natural gas.

Mr. Lynn said that in two counties there were wide variations in values of natural gas and casinghead gas reported for taxation. His report disclosed that in one county the highest price reported for natural gas was 1½ times greater than the lowest price reported and the highest price for casinghead gas was 14 times greater than the lowest price. In the other county the high price for natural gas was double the low price and the high price for casinghead gas was five times the low price.

"Had the State required the highest value for assessing the occupation tax on this gas taxes would have been increased several thousand dollars in these two counties alone," the auditor said.

Mr. Lynn also pointed to losses in taxes that had not been collected on imports of natural gas from other states. He referred to an opinion of the attorney general which cited a holding of the U. S. Supreme Court that such imports are taxable when gas is run from high pressure pipe lines into low pressure lines for local distribution, under the broken package doctrine. Mr. Lynn said additional gross receipts taxed from this source should amount to over $100,000.

GAS CONVENTION AT CHICAGO

More than 500 reservations already have been made for the International Gas Conference and fifteenth annual convention of the American Gas Association, which will be held September 25 to 29, inclusive, at the Stevens Hotel, Chicago. Because of the large attendance at A Century of Progress Exposition in Chicago, the association is urging its members to make hotel reservations well in advance of the convention. B. J. Mullaney, vice president of the Peoples Gas Light & Coke Co., 122 South Michigan Avenue, Chicago, is chairman of the committee on convention arrangements for the association.

ABANDON TEXAS APPEAL

AUSTIN, Tex., July 22.—The Railroad Commission and attorney general's department have decided to abandon appeal from a three-judge Federal court decision declaring void a state law for proration of natural gas production to market demand and among all producers within an area.

The appeal was dropped because a later law has opened a market outlet for gas of independent producers, through authority to strip the gas for casinghead gasoline, and to burn the residue for carbon black.

BORDER GAS PROJECT

CHATHAM, Ontario, July 22.—The strike recently of a substantial gas flow in the Nordon-Roney test on the Twin River structure in southern Alberta has given impetus to a project to pipe the gas to Magrath, Raymond and other towns in the adjacent area. About 35 miles of pipe line would be required, together with local distributing systems.

NEW GOVERNMENT PROJECTS

Announcement is expected to be made in the near future of the Federal Government's new public building program which will include the construction of between 500 and 900 small buildings, some in every state in the union. In this connection the American Gas Association's office in the Albee Building, Washington, D. C., is prepared to render whatever assistance it can to gas companies which may be interested in making contracts for gas fuel for any of the projects.

Stony Creek Gas Field Has Produced Since 1909

CHATHAM, Ontario, July 22.—A report recently issued covering mining operations in the province of New Brunswick for 1932 deals in part with the operations of the New Brunswick Gas & Oilfields, Ltd., in and adjacent to the Stony Creek Field. This field has been producing since about 1909, and is primarily a gas field. The gas produced at the Stony Creek wells, 12 miles below Moncton, is used for industrial and domestic purposes largely in the city of Moncton, and represents 93 per cent of the total value of the company's product at the well mouth, the remaining 7 per cent being the value of the crude oil. This crude oil is refined at a small plant erected within the past two years at Weldon on the C.N.R. Salisbury-Albert branch. Gasoline and residual oil are produced in this plant.

The value of the natural gas produced last year was somewhat greater than in 1931 but there was less oil, so that the total value of the company's product for 1932 was $140,529 against $141,971 for the preceding year. On this value the government received 5 per cent royalty.

Since the company must constantly be drilling new wells or deepening old ones to maintain its supply, two new wells were begun in the summer of 1932, one of which brought in a gas flow of 1,300,000 feet a day while the other had a very small flow. Two other wells were deepened, in one of which the supply of gas proved good, the other meager. A shallow exploratory well was drilled on the Colpitts Fox ranch, Colpitts Settlement, which did not develop any gas production.

The report gives detailed figures of the output of the field since its inception in 1909. These figures show that from 1909 to 1932 inclusive expenditures on the field aggregated $2,314,372.96. The crude oil output in that period aggregated 4,177,748 gallons while gas to a value of $2,261,230.04 was produced; the total value of production being estimated at $2,522,650.95. On this royalties of $127,632.44 have been paid to the provincial government, from which the company holds an exclusive concession. Crude oil production reached its highest point in 1927, when 801,932 gallons were produced.

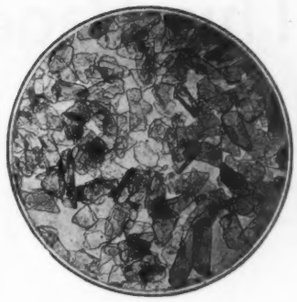
One of the problems in connection with the petroleum formations in the Stony Creek Field in Albert County has been to determine the trend and width of a buried ridge of older rocks which appears to form the northern limit of the oil and gas producing area. Exploratory drilling has proved to be very expensive while the information gained by this means so far is not very conclusive. Dr. W. J. Wright of the New Brunswick mines department with A. H. Miller of the Dominion Observatory and Dr. H. Norman of the Geological Survey of Canada have undertaken geomagnetic surveys to locate this ridge which lies buried under several hundred feet of cover.

PIPE LINE PROGRESS

PORT ALLEGANY, Pa., July 22.—The pipe line of United Natural Gas Co. from the Hebron Field to the company's lines in McKean County is reported completed to Fishing Creek, near Roulette.

Barrett

A MARK OF QUALITY SINCE 1854



Reproduction of the photomicrograph above shows the interlocking of the flakes of internal reinforcement used by Barrett. By laminating with the waterproofing agent they give Barrett Pipe Line Enamels unusual toughness and resistances to soil stresses.

For pipe of larger diameter, The Barrett Company will furnish equipment required to revolve pipe and spread the enamel.

Lower operating costs with

Whatever the type of pipe you use—steel or iron, light-wall or heavy-wall—lasting protection against corrosion is a matter that depends upon effective and adequate pipe line coating materials, properly applied.

Barrett Specification Pipe Line Enamels are the result of 79 years' experience in the development of coal-tar pitch protective products. Barrett application methods are modern in every particular.

The combination is assurance of lastingly satisfactory results —with a saving in time and money. 'Phone, wire or write.

The Barrett Company

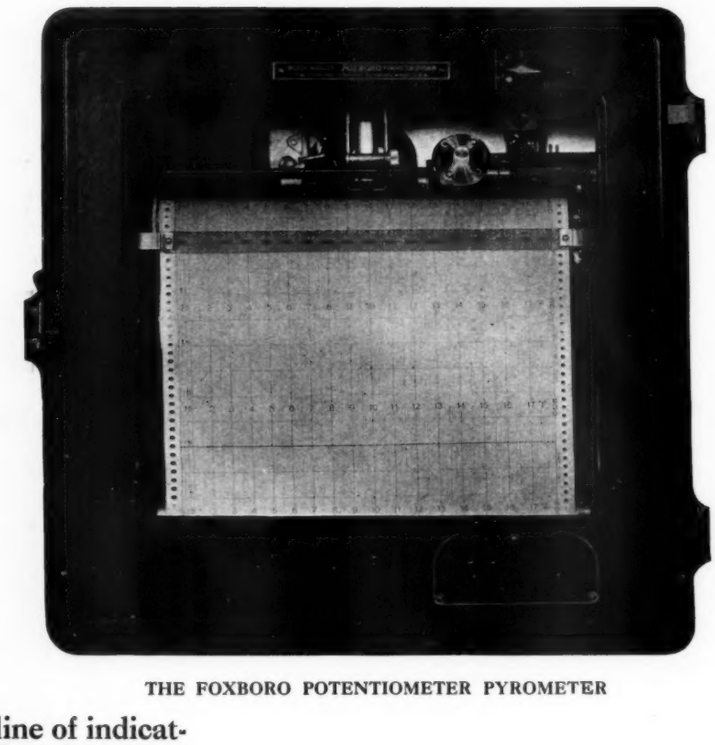
40 Rector St., New York, N. Y. 2800 So. Sacramento Ave., Chicago, Ill.

Barrett Specification

PIPE LINE ENAMELS

This Page Does NOT Contain Complete Information on the NEW FOXBORO POTENTIOMETER PYROMETER

● ● ● This temperature recorder has so many New and Unusual Features that we have room below to list only the ones that are most outstanding. You may get complete information from our BULLETIN NO. 190 which will be sent to you free on request.



THE FOXBORO POTENTIOMETER PYROMETER

● ● The latest addition to Foxboro's complete line of indicating, recording and controlling instruments is designed to meet industry's temperature measurement needs. Each feature has a definite industrial significance. Foremost among these features are:

A Rapid Cycle of Recording.
A Unique Design of Balancing Mechanism.
A Novel Inking Device for Multiple-Record Instruments.
A universal, moisture-proof and fume-tight case—may be either surface or flush mounted.
Any number of records from one to six on a twelve inch chart.
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PERSONAL PARAGRAPHS

Fero Williams, of George F. Getty, Inc., has been elected second vice president of the Los Angeles Petroleum Accountants Society.

* * *

Charles Hine, of the Standard Oil Company of New Jersey, arrived in New York last week from Rio de Janeiro on the steamship American Legion.

* * *

G. W. Stephenson, of Stephenson Hickman, Inc., which company operates a lubricating oil plant in Floresville, Tex., spent several days in Tulsa last week.

* * *

R. C. Stamets, of the tubular goods department of the Oil Well Supply Company, with headquarters in Dallas, Tex., was in Tulsa and other Oklahoma cities recently.

* * *

R. E. Holcomb, formerly assistant treasurer of the Skelly Oil Company, Tulsa, has been appointed assistant to President T. H. Barton, of the Lion Oil & Refining Company, El Dorado, Ark.

* * *

Stanley Minor, chief engineer for the Regan Forge & Engineering Company, San Pedro, Calif., returned recently from a month's trip through the Louisiana and Texas Gulf Coast fields.

* * *

R. B. Kelly, Fort Worth, Tex., assistant division manager for the Pure Oil Company, has returned from a business trip to Chicago. While there he visited the Century of Progress Exposition.

* * *

Daniel T. Pierce, Jr., son of the assistant to the chairman of the Consolidated Oil Corporation, has been admitted to partnership in Redmond & Company, members of the New York Stock Exchange.

* * *

Guy G. Jamison and C. W. Byron, San Antonio, Tex., oil operators, have moved to Houston where they have opened offices in the Second National Bank Building. They operate as Jamison & Byron.

* * *

Jerry Couch, petroleum engineer, with Shell Petroleum Corporation, has been discharged from a Winfield, Kans., hospital, where he was recuperating from injuries suffered in an automobile accident.

* * *

C. O. Moss, Deep Rock Oil Corporation's natural gasoline superintendent, with headquarters at Drumright, Okla., has gone to Longview, Tex., to install pumping equipment on Deep Rock's East Texas wells.

* * *

H. F. Stover, purchasing agent of Gaso Pump & Burner Manufacturing Company, Tulsa, has been elected second vice president of the Purchasing Agents Association of Tulsa. He has been active in the association for years and has served on important committees.

* * *

Dr. W. R. Veazey, director of the Dow Chemical Company, and N. A. Best, manager of the company's operation in the Mid-Continent Field, were in Kansas last week, on a trip of inspection. Their itinerary also includes inspection of Oklahoma, Texas and Louisiana oil fields.

* * *

Frank S. Turbett, supervisor of sales co-ordination and special cost analysis work at the Bayonne refinery of the Tide Water Oil Company, has been awarded a 45-year diamond-studded service button. Mr. Turbett started as office boy with the Chester Oil Company in Chester, Pa., in 1888.

* * *

Lafayette K. Williams, assistant night superintendent of the Philadelphia Gas Works Company, Philadelphia, Pa., has been awarded the Thomas N. McCarter Medal by the American Gas Association for saving the life of Robert Barr, Jr., night superintendent, by application of the prone pressure method of resuscitation.

J. Elmer Thomas, well known petroleum analyst, was in Tulsa during the past week.

* * *

J. M. Armstrong, geologist, and F. M. Nicholson connected with the land department of the Sinclair Prairie Oil Company, have been transferred from Eastland, Tex., to the Fort Worth, Tex., offices.

* * *

C. F. Walker, for years head of the automotive transport department of the Skelly Oil Company, has resigned to go with the Union Transportation Company of Tulsa as maintenance superintendent.

Men of the Industry

RAWLEIGH WARNER

Rawleigh Warner, vice president, treasurer and director of the Pure Oil Company, had a broad experience in business and utility fields before he joined that organization. Mr. Warner, who was born in Chicago in 1891, prepared for college at Lawrenceville School, Lawrenceville, N. J., and then entered Princeton University, from which he graduated in 1913.

Following his graduation, Mr. Warner was in the employ of the Central Trust Company of Illinois for about six months, then becoming a partner in the firm of Earle & Warner, sugar brokers. In 1915 he was made vice president and treasurer of the Central Sugar Company of Chicago, resigning in 1917 to enter the army for World War service.

On being mustered out of service, Mr. Warner in January, 1919, entered the employ of Dawes Brothers, Inc., as assistant treasurer. The organization's principal activity was in the utility field, operating and owning gas and electric light properties, and being besides substantially interested in the Pure Oil Company. Mr. Warner became vice president, treasurer and director of Dawes Brothers, Inc., holding these offices till September, 1926, when the Pure Oil Company transferred its general offices from Columbus, Ohio, to Chicago. With this change, Mr. Warner was made treasurer and director of the Pure Oil Company. The next year the office of vice president was added.

Mr. Warner's interests outside of the oil business are chiefly as director of the City National Bank & Trust Company of Chicago, Drovers National Bank of Chicago and the City National Bank & Trust Company of Evanston, Ill.

Phillip G. Gossler, executive of Columbia Gas & Electric Company, sailed on the steamship Rex from New York last week for a visit to Europe.

* * *

C. C. Spicer, president of the Republic Petroleum Company, has returned to Los Angeles from Chicago, stopping off en route at Rawlings, Wyo., to inspect a wildcat in which the company is interested.

* * *

Frank Phillips, president of the Phillips Petroleum Company, and an aviation enthusiast, flew out to Los Angeles, Calif., in his private plane from Bartlesville, Okla., to witness the National Air Races.

* * *

H. H. Henderson and W. W. Harvey, San Antonio, Tex., geologists and operators, are now located in Houston, having recently moved to the latter city. Their joint offices are in the Second National Bank Building.

* * *

S. F. Shaw has returned to San Antonio, Tex., from Oklahoma City, Okla., where he attended the hearing of the Oklahoma Corporation Commission in connection with application to increase the allowable production in certain fields.

* * *

Joe Kelkenstein, of Dallas, Tex., drilling superintendent of the Magnolia Petroleum Company in Texas, Louisiana and Arkansas, has been spending considerable time on the Gulf Coast, particularly at Tomball, where his company has extensive holdings.

* * *

Clyde H. Walters, formerly with the ammonia department of E. I. du Pont de Nemours & Company, Inc., has become a member of the research and development department of the Carbide & Carbon Chemicals Corporation, South Charleston, W. Va.

* * *

Lundy Woods, formerly purchasing agent of the Oklahoma Natural Gas Corporation, in Tulsa, is spending his vacation in that city. He has been with the marketing department of the Barnsdall Oil Company in Kansas City, Mo., for the past four years.

* * *

Burnard S. Biggs, until recently connected with the research staff investigating petroleum bases in the University of Texas laboratory, has been appointed to the faculty of the Carnegie Institute of Technology in the Coal Research Laboratory, Pittsburgh, Pa.

* * *

E. H. Buckner, formerly president of the Houston Oil Company; Herman F. Heep, president of the Heep Oil Corporation, and W. B. Hillegeist, have organized the Southwest Oil Corporation with a capitalization of $300,000. Their operations will be in the new Greta Field of Refugio County, where they already have one producing well.

* * *

Dr. S. P. Coleman, who has been director of the research and development work for the refining department of the Humble Oil & Refining Company, Houston, Tex., has resigned to become a member of the co-ordination committee of the Standard Oil Company of New Jersey's manufacturing and sales operations. He will have headquarters in New York City.

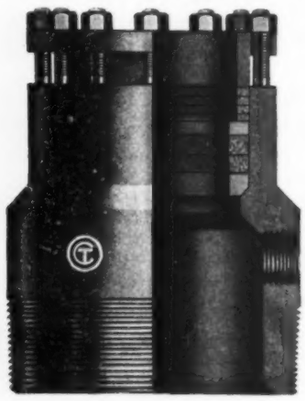
* * *

E. R. Shepard, of the Underground Corrosion Division of the U. S. Bureau of Standards, has been granted an indefinite furlough. He will engage in consulting work in connection with electrolysis and soil corrosion surveys, pipe line valuation and related activities. His experience along these lines covers 18 years with the Bureau of Standards and as an independent engineer. He recently developed the Shepard earth resistivity meter and established a technique for determining the locations of corrosive areas along pipe lines.

NEW AND IMPROVED EQUIPMENT

New Bradenhead Repacked Under Extreme Pressures

The Oil Center Tool Co., Houston, Tex., has begun marketing the OCT Type I bradenhead, which permits repacking under extreme pressure. It has undergone repacking tests, under pressure of 3,000 pounds without leaking, during the process of repacking. This bradenhead packs against casing and also against the casing



collar, making two effective seals, and repacking under pressure is done simply by removal of the packing gland and insertion of an additional packing ring. The packing is asbestos, for protection against fire, although hydraulic packing may be had upon request.

The weight of the casing crushes two large asbestos rings under the casing collar, which sets on a steel junk ring, and four smaller asbestos rings set on the steel junk ring, sealing around the collar.

This improved bradenhead is made of forged steel, in all required sizes, and is tested up to 6,000 pounds.

New Rubber-Tired Tractor Can Be Utilized as Truck

A rubber-tired tractor, developed by the Allis-Chalmers Manufacturing Co., Milwaukee, Wis., ran at a speed of 35.4 miles an hour in an official A.A.A. automobile test. This is about six times faster than tractors have been able to run in actual use. The tractor has four speeds forward. H. C. Merritt, head of the tractor division of Allis-Chalmers, says the new tractor can be used in the field, then unhitched and backed up to a trailer to take produce to market as fast as trucks, without holding up traffic.

Allis-Chalmers has used four speeds in its new type tractor for some time, but has never before attained a speed of more than 15 miles an hour. The rubber tires on the new type tractor carry 12 pounds of air pressure, and have a tractive surface of 180 square inches.

CAVINS IN NEW LOCATION

The Cavins Bailer Service, Long Beach, Calif., has moved into its new location at 2853 Cherry Avenue, where a new servicing plant has been built especially for testing and handling the Cavins hydraulic-suction bailer, hereafter to be known merely as a "Cavins." This tool is a combination of a bailer, a fishing tool and a perforated cleaner. A new name, the Cavins Co., has been adopted for the parent organization, which operates throughout the United States, the tool rentals and the sales in foreign countries.

Among the Equipment Houses

The Link-Belt Co., New York, announces the appointment of S. B. Schnitter, Apartado 84, Maracaibo, Venezuela, as its representative in Venezuela and Trinidad. Mr. Schnitter is said to have had wide experience with Link-Belt pumping units, mud reclaiming screens, rotary drilling chains and other transmission.

—

The Northern Equipment Co., Erie, Pa., manufacturer, has appointed C. H. Wilson, 1403 Park Boulevard, Troy, N. Y., as sales representative in the Albany district.

—

The Sullivan Machinery Co.'s St. Louis district sales office formerly located at 2015 Railway Exchange and the warehouse formerly located at Mount Vernon, Ill., are now combined under the direction of D. M. Sutor, manager, at 2639-41 Locust Avenue, St. Louis, Mo. A complete stock of parts for air compressors, hammer drills, drill sharpeners, hoists, coal cutters, coal loaders, cutter bit sharpeners and diamond drills will be carried.

—

The Babcock & Wilcox Tube Co., Beaver Falls, Pa., has appointed T. F. Thornton salesmanager of the Detroit district, with headquarters in the Ford Building, Detroit, Mich.

The Sonken-Galamba Corp., 64-108 North Second Street, Kansas City, Kans., reports that it has sold and delivered more than 100 tanks in the East Texas Field, Kansas and Oklahoma since December 1, 1932. It has purchased all of the Teapot Dome tanks that were built new in 1926 and have been in service only three or four years, and is ready to give quick service in any field that needs storage.

—

The Chain Belt Co., Milwaukee, Wis., has moved its St. Louis, Mo., office from 339 North Taylor Avenue to 5475 Cabanne Avenue.

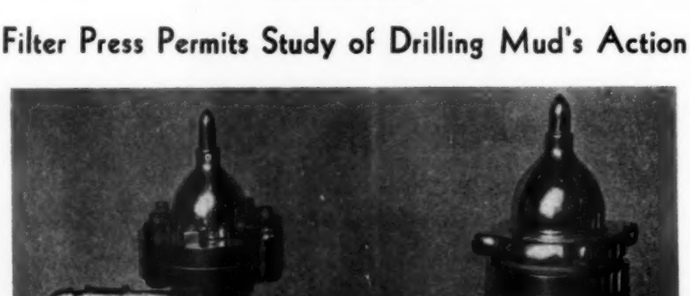
—

The Erie Bolt & Nut Co., Erie, Pa., has opened distributing centers in Tulsa and Houston, the Moorlane Co. being distributors for their products. In both places Moorlane carries a complete line of bolting equipment for the oil fields and refineries of alloy steel studs and carbon steel bolts.

—

The Fisher Governor Co., Marshalltown, Iowa, manufacturer of pump governors, pressure regulators, steam traps, liquid level controllers and strainers, has appointed the M. N. Dannenbaum Co., 304 Shell Building, Houston, Tex., as its direct factory representative in southern and eastern Texas.

Filter Press Permits Study of Drilling Mud's Action



The illustration is that of a model filter press, developed by the Baroid Sales Co., Los Angeles, Calif. It is a duplicate of the larger filter presses used in the various laboratories of the Baroid Sales Co. for the purpose of examining the wall-building action of various drilling muds.

The press is provided with a hand-operated hydraulic pump, a reservoir to contain the mud under examination, and a filter chamber containing a sand core through which the mud is filtered. The construction of the filter chamber is such that the mud under the pressure of the test is exposed to an oil sand core which acts as a filter bed. The filtrate passing through the core flows through a pipe to the outside of the filter chamber.

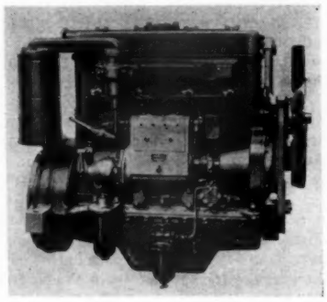
When no more filtration occurs at the pressure of the test the filter chamber is opened and the cylinder containing the core is removed for examination and back washing. The unit is also fitted with attachments by which water may be pumped in a reverse direction through the core in order to determine the pressure required to free the surface of the sand of its mud cake.

This apparatus makes it possible to study the wall-building action of drilling muds, the penetration of mud into various types of sand cores and the pressure required to wash the face of the sand free of its mud sheath.

Hesselman Engine Is to Be Manufactured by Waukesha

The Waukesha Motor Co., Waukesha, Wis., has completed license arrangements with the Hesselman Co. of Stockholm, Sweden, for the American rights under the Hesselman oil engine patents. Under these patents, Waukesha will manufacture a line of heavy oil engines for truck, tractor and general industrial service.

The Ingersoll-Rand Co. has held a similar license for use in portable air compressors, and for more than a year these engines, built by the Waukesha Motor Co., have been on the market.



Hesselman engines occupy a place midway between the automotive Diesel engine and the gasoline engine. They burn the same fuels as a Diesel engine, but use electric ignition. They show slightly less fuel economy, but they weigh less so that in automotive work, they are on almost even terms.

The Hesselman cycle is a distinctly different principle from any of the previous heavy fuel oil engine cycles. Its operation is simple. On the intake stroke the cylinder is filled with air only, the quantity being metered through a balanced throttling valve and proportioned to the load requirements. A specially designed intake valve directs the air and imparts to it a rotary movement in the cylinder. The air is compressed to a greater degree than in a gasoline engine, but not to the same extent as in a Diesel. At the top of the compression stroke a high pressure Bosch injection pump delivers heavy fuel, the quantity to insure complete combustion being controlled by mechanical linkage with the air throttle. The fuel is injected through special Hesselman injectors which throw it into the rotating air stream where the fuel mist is intimately mixed with the air. At this moment the spark plug fires the fuel mixture. The unusual success of this cycle is said to be due to the special features which keep the mixture ratio in the zone surrounding the spark plug always within the necessary limits for instantaneous combustion independent of the engine load or speed. At the end of the power stroke, the exhaust valve opens and releases the burned mixture, and the cycle is repeated.

Hesselman engines will burn any fuel that a Diesel will handle, and some fuels that a Diesel engine cannot utilize.

SYSTEM FURTHER DEVELOPED

Further development of the Papico odorizing system is announced by Harry F. Haldeman, Inc., which has taken over the manufacturing and sales of the system from its predecessor, Pacific Pipe & Supply Co. of Los Angeles, Calif. The system has been more compactly constructed to permit simple installation on distribution lines and at city gates. It is now manufactured in four different types.

CLASSIFIED ADVERTISING

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6 lines	2.10	3.60	5.10	6.60
7 lines	2.45	4.20	5.95	7.70
8 lines	2.80	4.80	6.80	8.80
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Six words usually constitute a line.

Compute white space at the above rates.

Mail your Classified Advertisement to THE OIL AND GAS JOURNAL Tulsa, Oklahoma.

For Sale—Equipment

25 K.W. and 40 K.W. Gas Engines, 220 volts, D.C. Two 100 K.W. Gas Engine Generator Sets, 220 volts, D.C. 7x6 Ingersoll-Rand ER-1 Air Compressor. Six-inch Oster Pipe Threading Machine. Also, large stock of lathes, pipe machines, milling machines, etc. Send for our list. Terms to suit.
CINCINNATI MACHINERY & SUPPLY CO.
26 West 2nd St. Cincinnati, Ohio.

14 MILES USED 4-INCH LINE PIPE
Made of plain end marine boiler tubes, 18-ft. lengths, welded. Will cut 40-ft. lengths beveled ready to weld. Excellent pipe, used only short while. All or part offered at very attractive price. Now located Pryor, Okla. Phone or wire—collect—for details.
THE BRIDGEPORT MACHINE CO.
Wichita, Kans.

55,000 OR 66,000-BBL. TANKS
Will move and re-erect on your grade one or more steel roof storage tanks, practically new, anywhere in United States at great saving. If you have crude oil, fuel oil, gas oil or gasoline we can build the storage.
SONKEN-GALAMBA CORPORATION
64 North Second St., Kansas City, Kans.

BARGAINS—Demonstrator Arc Welders, Guaranteed. Electric, Gasoline Engine, Belted—All with "Simplified" control. 30 Days' Trial, Terms. Hobart Bros., Used Equipment Division, Box OG-73, Troy, Ohio.

50 H.P. Bessemer commercial Gas Eng. 16x16 duplex vac. pump. 2 mi. East Bartlesville. C. W. Staats, Box 17, R. 3, Bartlesville, Okla.

Equipment Wanted

WANT—Roller wall map of Kansas. Prefer scale 2" to mile. Smaller scale considered. Address Box F-721, The Oil and Gas Journal, Tulsa, Okla.

Business Opportunities

DRILLING BLOCK
Have 5,000 acres to responsible parties, for 4,000-foot well shallow gas and oil at 1,000 feet, good for 25 bbls., very best of subsurface geology. Angelina Co. Don't ask for maps; let me show you the block. H. C. Jennings, P.O. Box 923, Lufkin, Tex.

SEISMOGRAPH hit new Crescent and Tomball fields. Capable seismograph engineers offer good deal to oil company or individual financing all or part of new seismograph. Big returns. Address Box F-720, The Oil and Gas Journal, Tulsa, Okla.

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Before disclosing your invention to anyone, send for blank form:
"Evidence of Conception,"
Instructions "How to Establish Your Rights" and complete information FREE!
LANCASTER, ALLWINE & ROMMEL
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LONGEST PROFITS are in new oil fields. Perpetual royalty under undrilled major company lease blocks $4 per square mile. R. R. Fisk, Box 395-B, Wichita Falls, Tex.

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CHOICE INCOME OIL ROYALTIES. Kansas and Oklahoma, for investors and dealers. J. L. HANER, 105 McKibbon Bldg., Muskogee, Okla.

ROYALTIES in new North Cut Bank Oil Field, Montana, $62.50 acre base. Landowner, Box 1225, Great Falls, Mont.

Royalties—Production

BETTER CLASS
MONTHLY INCOME ROYALTIES
W. E. Cook, Court Arcade, Tulsa, Okla.

ROYALTIES FOR INVESTMENT
Andrew J. Barrett,
Suite 1903, The Philtower,
Tulsa, Okla.

HIGH GRADE producing oil and gas royalties offered to dealers. Billie Smallwood, P. O. Box 2261, Tulsa, Okla.

ROYALTY DEALERS

BE SAFE! — Get an unbiased report on royalties before buying—ask about our service.
ROYALTY ENGINEERS, INC.
Philcade Building, Tulsa, Okla.

PRODUCING OIL ROYALTIES
in Fractional deeds from $100 up.
John L. Dickson, Box 1113, Tulsa, Okla.

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Present low oil prices are most favorable for royalty investments. Our twenty years' oil experience assures you of careful and intelligent selection.
Weekly oil report sent free on request.
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for dealers a specialty.
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Kansas—Oklahoma—Texas
Always handle the best.
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APPRAISALS & REPORTS ON OIL, GAS & ROYALTY PROPERTIES BY—F. W. FREEBORN ENGINEERING CORP. 20 Years Mid-Continent Fields.
Alexander Bldg., Tulsa, Okla.
Phone 4-6938.

ROYALTY offsetting Crescent pool discovery well, Logan County, Okla. Bargain. Write, Wire, W. C. HALLAM, 510 Patterson Bldg., Denver, Colo.

PERPETUAL DEEDED ROYALTIES
Your selection of over 400,000 acres. Some major company blocks. H. H. White, Box 674, San Antonio, Tex.

Leases—Production

NEW MEXICO Oil and Gas Leases and royalties. Send 50 cents in stamps for new State Oil Map of New Mexico. Roy G. Barton, Clovis, New Mexico.

EVERY MAN dealing in Texas leases and royalties should get quotations, maps and prices here. Dealers' territory protected. W. J. Dobbs, 915 Tower Pet. Bldg., Dallas, Tex.

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The demand for used equipment (in good condition) far exceeds the available supply.

If you are one of the few who have idle equipment and you want to dispose of it, a buyer is waiting to contact you. Let him know through these columns. The accepted medium for bringing buyer and seller together for over thirty years.

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THE OIL AND GAS JOURNAL
Tulsa, Oklahoma.

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1 inch	13 times	4.50
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Rates for Classified without display shown on opposite column.

One point borders and ten point capitals are allowed, larger type not accepted.

Changes in copy must be in our office 10 days in advance of publication date.

Mail your advertisement to the Largest Classified Section in the Oil Industry.

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma.

Leases—Production

FOR SALE—Oil and Gas Lease on SW/4 and W/2 SE/4 of Section 64 (La Chuse Ranch), McMullen County, Texas. For particulars write to The Farmers State Bank, Albert, Kansas.

LAND tested for Oil and Gas, references, drilling blocks. E. Fackler, 4020 Walnut, Kansas City, Mo.

WE ARE desirous of making connections with parties interested in oil and gas production, leases or drilling in Kentucky and West Virginia. We have real opportunities that will stand thorough investigation. We have leases close to production and are in position to furnish everything. Will drill on interest basis at reasonable figure. Address Lock Box 1682, Charleston, W. Va.

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INQUIRIES solicited — Corporations desiring capital through securities issue.
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110 East 42d St., New York City.

JAMES E. MILLER CO., 207½ E. Third St., Tulsa, Okla., will co-operate with responsible parties seeking aid in financing projects of higher order.

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Corporations requiring capital for promotion or expansion are invited to communicate with the undersigned.
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Established organization with record of successful accomplishment offers immediate action in financing of sound projects.
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GASOLINE PLANT SUPERINTENDENT. Man, 33 years old, married, with eleven years experience in all phases of gasoline plant work, for the past five years in charge of two large modern plants, would like to make new connection about November first. Full details and recommendations furnished on request. Address Box F-710, The Oil and Gas Journal, Tulsa, Okla.

Incorporations

CHARTERS—Delaware best, quickest, cheapest, most liberal. Free forms. Colonial Charter Co., Wilmington, Del.

DELAWARE CHARTERS—Fees small, free forms. CHAS. G. GUYER, 901 Market St., Wilmington, Del.

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OCECO METER

Always ACCURATE

Under widely varying pressures and viscosities

Accuracy takes on a new meaning with the OCECO. This meter is *permanently* accurate—as accurate after years of service as when it leaves the laboratory.

It is calibrated and sealed before shipment. It requires no further calibration on the job. Normal wear cannot change its original accuracy.

Use it wherever a transfer is made—at any point between well and filling station.

For any product from crude to finished gasoline or lubricating oil—for producing, refining, pipe line or marketing service.

It is properly designed, generously proportioned and ruggedly constructed—*all-metal construction.*

If you are at all interested in meters or ever expect to be, we shall be glad to supply complete information. Direct inquiries to—

THE OIL CONSERVATION ENGINEERING CO.

877 ADDISON ROAD CLEVELAND, OHIO

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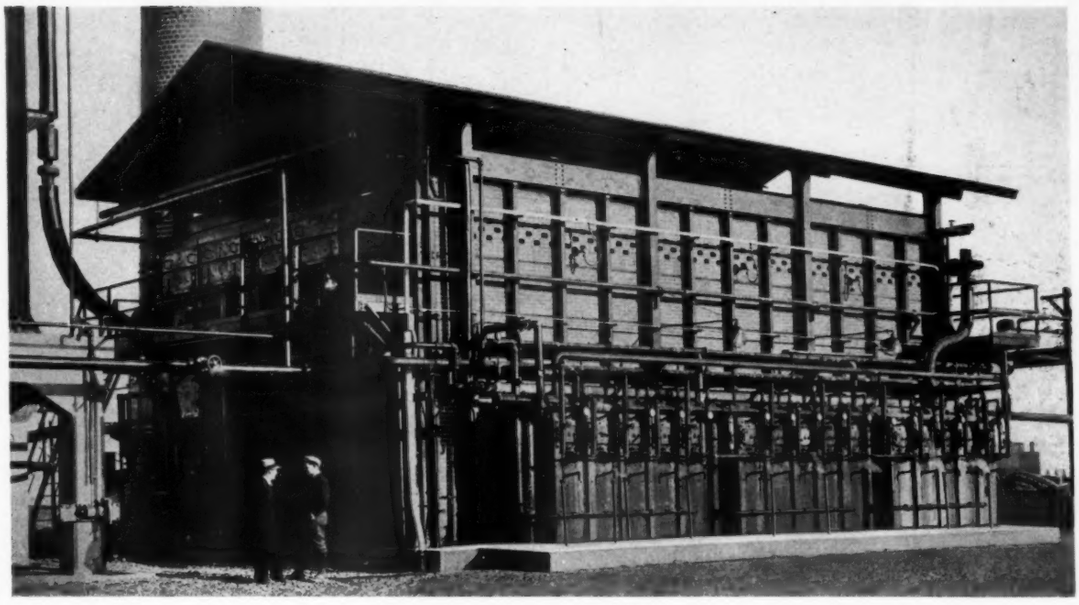
Winkler-Koch Engineering Co., The
W-K-M Co., Inc. .....
Wyatt Metal & Boiler Works ....

Y

Young Engine Corp. .....
Youngstown Sheet & Tube Co., The 32-B



Refinery and Power Plant Equipment

Refinery equipment from complete plants to small heat exchangers, and steam generating equipment from complete power plants to small superheaters are furnished by Foster Wheeler to meet individual requirements.

The cracking heater above and the power plant below were installed in a refinery which started operation this year and are typical of good practice.

Foster Wheeler steam and oil engineers with their years of experience in solving difficult problems are available for consultation without obligation.

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This new method of pumping offers the Industry a definite advance in the economical production of oil.

The energy of the gas associated with the oil, plus gas supplied at the casing head as required, lifts the fluid without strain on the equipment.

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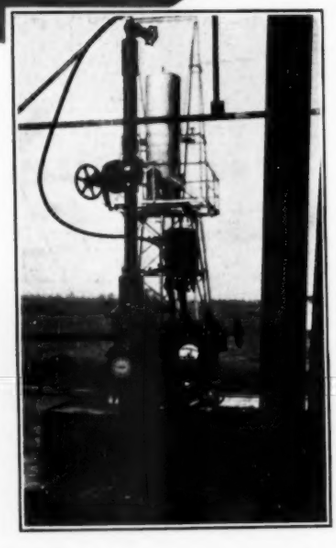

Write for Complete Information.

§

2½" Hughes Plunger Lift on Humble Oil & Refg. Co.s. Deatherage No. 2 at Sugarland, Texas.

Depth of well—3766 feet.
Installed—10-5-31.
Tubing Seat at—1176 feet.
Production—323 bbls. per day.
Strokes per day—240.
Input Gas—192 cu. ft. per bbl.
Well Gas—62 cu. ft. per bbl.
Casing Pressure—220 lbs. per square in.
Oil Density—.90.
Oil Viscosity—Saybolt viscosity at 100 deg. F.—63 Sec.

HUGHES TOOL COMPANY

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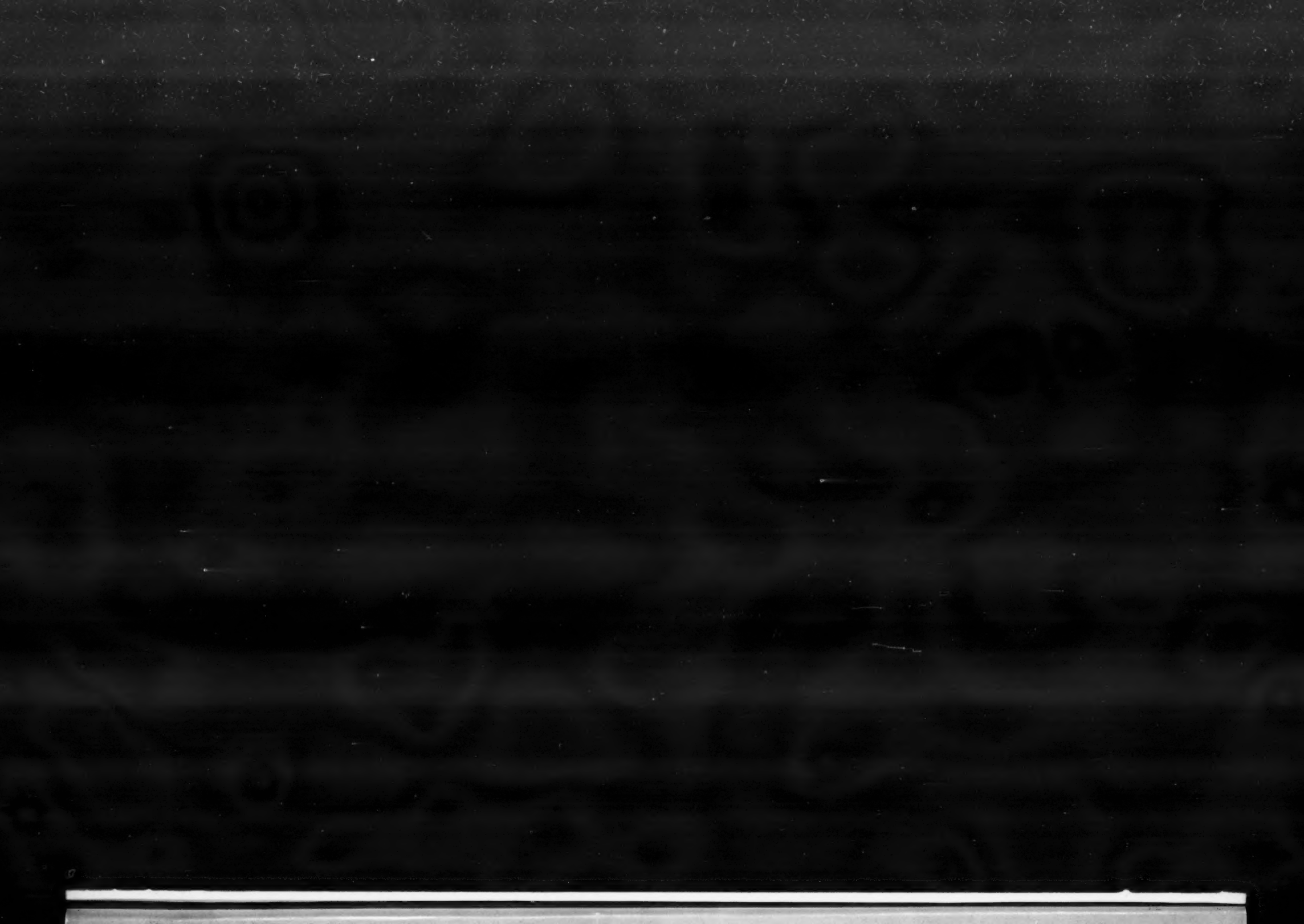
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